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MENCKEN ON THE TELEPHONE; GUARDING INDEPENDENT SECURITIES

For some reason — and that reason seems insufficient to most people — any opinion that H. L. Mencken, the literary critic, delivers himself of appears to get an unusual amount of publicity.

He writes on a wide range of topics and generally "pans" the something or somebody he is writing about most unmercifully. Maybe it is his bitter sarcasm that wins him so many quotations, for, peevish though he usually is, he certainly knows how to club a subject to death with harsh, brutal language.

* * * *

Mencken wrote an article for the Sunday newspapers recently on "The Telephone Nuisance," and, according to custom, it is receiving much attention. He pays the telephone, as a modern necessity, a splendid tribute. What he objects to is the nuisance of being called to the telephone to talk to many people who bore him and waste his time.

He gives several instances of being obliged to "hold the wire" while waiting for messages that were of no account when received, and he estimates that his personal penalty for the resulting profanity will be not less than 10,000 years in hell.

* * * *

Two remedies have occurred to Mencken, both of which he decides are probably useless. One is to have a telephone that is not listed in the directory, but he admits this would be impracticable as it would deprive him of calls that would be welcome. The other remedy is to have no telephone at all.

"But this," he concludes, "is cutting off one's nose to spite one's face. The telephone in the modern world is far more than a mere convenience; it is an absolute necessity. Without it one wastes more time than it even wastes itself, even when it rings all day."

* * * *

That being true, then, one wonders "what's all the shooting about?" No doubt the bores that Mencken complains about find the telephone an easy way to reach him, but, if he is really as cold-blooded as his vigorously cruel words indicate, he could easily get rid of them by 'hanging up." Suppose instead of telephoning, the bores came to see him in person! Then he would be up against it.

But after all, Mencken says: "The telephone is undoubtedly the most valuable of American inventions. It is worth a dozen airplanes, radios and talking machines."

Coming from the champion kicker of the Twentieth century this is, indeed, a compliment of which the telephone may well be proud.

* * * *

It is gratifying to note that state telephone associations are actively cooperating in the work of protecting the industry by demanding careful scrutiny of securities issued on telephone properties. The Kansas Independent Telephone Association at its Manhattan convention followed the example of the Texas association and adopted a strong resolution covering the points emphasized in these columns regarding this important phase of the situation.

The Kansas declaration effectively calls attention to the inherent stability of the telephone business, and warns against the element of speculation, urging the necessity of investigating proposed security issues with a view to determining that they insure a safe margin of security and that the financial set-up provides for adequate depreciation requirements.

* * * *

Along the same line of protecting the industry, the United States Independent Telephone Association is sending out thousands of reprints of TELEPHONY'S editorial of April 2, entitled "Tell the Investor the Facts," to its member companies, with a letter requesting telephone men to distribute them among their local bankers.

In this letter, President F. B. MacKinnon makes some comments that should be read with careful thought. He says:

"Enclosed you will find a reprint of the editorial which appeared in TELEPHONY for April 2, entitled 'Tell The Investors the Facts.' You probably have already read this editorial in your copy of TELEPHONY. We send this to you not only to call your attention to it, but to enable you to have a separate copy to place in the hand of your banker.

The association, as it has stated from time to time, is attempting to safeguard

the Independent telephone group against possible reactions from the issuance of securities based upon unsound financial structures, which securities will go into the hands of innocent purchasers, who in the end will probably lose by that investment. Through their loss much injury will be done to the value of Independent securities, and our well-managed and conservatively financed organizations will have difficulty in disposing of their securities to advantage.

One criticism may be made of the Texas resolution, and that is that it does not make the depreciation rate high enough for small properties. There are well-managed institutions that have found it necessary to set up 7, and in some instances 8 per cent, depending upon the peculiar character of their properties and the locality in which they are operated. This point, perhaps, should be explained.

But the emphasis that is placed by the Texas resolution upon the necessity of there being an annual charge for depreciation of not less than 5 per cent for all classes of telephone properties is the one point to which the attention of bankers and investors should be called; also, that depreciation must be figured upon the value of the physical property and not upon the basis of gross earnings.

We hope you will make good use of the copy which we enclose. Should you need any extra copies, we shall be glad to supply them. A number of the state associations are arranging to distribute reprints of the editorial throughout their states. We hope this general program will result in calling the attention of our own people and the bankers and investors to the necessity of careful scrutiny of all offerings of telephone securities by investment houses."

* * * *

Telephone men in touch with their state utility commissions should also pass the same thought along to them. The commissions have the final say as to authorizing security issues; and if they know that men in the telephone business are keenly interested in safeguarding telephone financing, the regulatory authorities will feel it necessary to watch such matters more closely.

Of course, this will also improve the standing of the industry. When representatives of an industry show they are scrupulously careful of its reputation, the effect is beneficial on the public generally.

COMING CONVENTIONS.

Ohio, Columbus, Neil House, April 27, 28 and 29.

Pennsylvania, Harrisburg, Penn-Harris Hotel, May 3, 4 and 5.

New York, Rochester, Powers Hotel, May 25, 26 and 27.

Wisconsin, Madison, Hotel Loraine, June 7, 8 and 9.

Vermont, Burlington, Van Ness House, June 14 and 15.

Measuring Service in Units of Time

Conditions Which Led to Installation of Device for Measuring Exchange Telephone Service in Units of Time—Results Accruing to Subscribers and Company from Adoption of "Pay-for-What-You-Use" Principle of Service

By Coburn Allen,
Commercial Superintendent, Puget Sound Telephone Co., Everett, Wash.

In the issue of TELEPHONY for January 8, 1927, an article appeared by Dr. Horace M. Gray, Department of Economics, University of Illinois. Dr. Gray calls attention to the fact "that the telephone business, unlike some other utilities, is subject to the law of increasing costs" or to put it another way, he says that as the telephone business "expanded and more subscribers were added, more than proportionate amounts of capital and labor were required to provide the service for each added customer" and so he adds that "the cost of furnishing service per customer tended to increase."

Rightly enough, he thinks that "practical telephone men should be concerned, not so much with the existence of this law, *but rather how to combat it; how to reduce costs to postpone as long as possible the blighting effect of increasing costs.*" Because, of course, it goes without saying that increased costs must, in the end, work a hardship on the telephone industry since the tendency of the gas and electric utilities is in the direction of lower rates.

Dr. Gray directs attention to the fact that, whereas there was a general tendency in the direction of rising prices for all commodities between the years 1896 and 1923, "since 1923 there has been a slight downward movement of prices." And it now even "seems reasonable to infer that the country may be entering a period of declining prices."

If it is really true that a period of declining prices has actually begun, it is not difficult to see that the telephone industry, operating heretofore upon a basis of continually-increasing prices, is facing serious difficulties unless its finds some way to reshape its policies so as to conform to the general economic tendencies of the day.

Unless it does so, the telephone industry will not only find it increasingly difficult to secure a constant increase in rates, but it will find it increasingly difficult to justify such an increase; for, along with the decline of other commodities, the cost of capital seems to be declining also.

There is, of course, a constant tendency for capital to multiply itself so that gradually, as the nation's capital account increases, there is so much capital competing for a limited reward, that the tendency is for the holders of it to accept a constantly smaller return for its use. Such a tendency, of course, only adds to the difficulty of the telephone industry which must, under its present policy, continually request an increase in rates.

If the telephone industry is to avoid the difficulties occasioned by advancing rates, it must keep down as far as possible the amount of equipment required to supply telephone service, for this will reduce the interest charges, the depreciation, the taxes, the insurance and the maintenance costs.

If, for example, some means could be found to make multi-party line service more acceptable, it is obvious that the amount of equipment required per subscriber would be reduced and so it would be possible to supply telephone service at a reduced cost. A step in this direction came with the introduction of harmonic ringing.

Let me quote again from Dr. Gray:

> Of equal importance with *the general level of rates is the problem of the proper classification and differentiation of rates.*
>
> In a very simple community life, where the people are all engaged in the same or closely related occupations, where they all use telephone service in approximately the same quantity and at well-distributed time intervals, where the telephone company offers but one uniform class of service, and where all the subscribers live and work within approximately the same distance from the central exchange, it is practical and equitable to levy a flat, uniform charge against all subscribers. It is manifest, however, that these simple conditions cannot and will not long prevail in any but the most unprogressive communities.
>
> It is a truism to say that economic progress involves division of labor, increased variety of economic, social and political

activities, and concentration of activity in certain strategic centers. It is also true, although perhaps regrettable, that our competitive system of economics tends to produce inequalities in purchasing power. This is to say, some, by dint of greater skill or greater industry, are able to secure a large portion of the social income, while others less fortunate or less industrious receive a smaller share. This last fact gives rise to greater ability to pay on the part of some than on the part of others.

The simple community life will, therefore, tend to become more complex. Many different business and social activities will arise, all delicately inter-related by the existing lines of communication. Some persons will find it necessary to make more calls than others, and many will insist on making their calls at the same time in the day. Some will find the standard of service inadequate for their needs and will insist on better service, special equipment, and private lines.

Some will be located near the central exchange, others at remote distances. Some will use telephone service as a means of conducting business, others as a social convenience. Some will have ability to pay for the best grade of service, while others can barely afford the service, even of the poorest grade. Still others will be, or think themselves, unable to afford any telephone service.

It is manifest that a flat, uniform rate is unthinkable under these complex conditions. From a company point of view, it is a hindrance to expansion, it is uneconomical, and a source of endless conflicts with irate subscribers. From the public point of view, the flat-rate system is inequitable as among subscribers and not conducive to good service. A measured or pay-for-what-you-use rate, on the other hand, is the true economic type of rate.

Under such a rate each subscriber receives a quality and quantity of service commensurate with his needs and in accordance with his ability to pay. A measured rate, moreover, makes possible the establishment of some relationship between the quantity of service used by any one subscriber and the cost of producing that given quantity of service.

In general and in detail, the conditions outlined by Dr. Gray are conditions which the Puget Sound Telephone Co. at Everett, Wash., faced soon after its organization in 1916. The Puget Sound Telephone Co. resulted from the consolidation of a group of exchanges in the state of Washington operated by The Pacific Telephone & Telegraph Co. and the Puget Sound Independent Telephone Co. Among those exchanges was the one at Everett.

At the time the physical consolidation was actually complete, the number of stations at the Everett exchange was 3,994. By April, 1922, the number of stations was 6,072. At this rate, it was clear that if the growth of the Everett exchange continued, it would be only a matter of time until the facilities, both as to switchboard and as to outside plant, would be exhausted.

The Puget Sound Telephone Co. had the option of doing over again what telephone companies usually do, namely to build new outside plant, provide a new switchboard, and erect a new building for housing it; or, it could seek some means to increase the usefulness to a still greater extent of the plant, both inside and out, which it already had.

That is to say, if a way could be discovered by which existing equipment could be made to serve satisfactorily two people where it only served one, the capacity of plant would be doubled and the problem would be solved, for a long time at least. The essence of the problem, therefore, was

"If Two People Can Make Use of a Given Instrumentality," Says Mr. Allen, "Where Only One Made Use of it Before, That, We Believe, Is Sound Economy. It Cannot Fail to Win Public Confidence—And It Cannot be Successfully Attacked."

to devise some way which would make multi-party line service acceptable to our subscribers.

About this time, a means was offered of measuring local telephone service in units of time. It was clear that a charge, based upon minutes of use, would tend to reduce the length of conversations, and would thus make trunks more uniformly available.

It appeared upon examination also that under this system of measuring telephone service, the person listening-in to the conversation of others would be charged for this, and that under this plan the objection to lack of privacy would probably be removed.

It seemed, therefore, that if this device for measuring telephone service in units of time proved practicable, we would:

1. Reduce the length of conversations to what is useful and necessary. Long-winded gossip and endless talking about nothing would tend to disappear.
2. Insure privacy on party lines.
3. Make multi-party line service acceptable.
4. Multiply the number of persons who could be served with existing equipment.
5. Avoid the need for an advance in rates.
6. Move in the direction of lower rather than higher rates per subscriber.
7. Conform to a sound economic tendency.
8. Apply a means whereby "a proper classification and differentiation of rates" could be intelligently arrived at.

What we were concerned with was, in its essence, an economic problem. We were not merely seeking to measure rates. A rate, based upon the number of messages, was already established telephone practice. Such a practice did not tend to reduce the holding time of trunks, but on the contrary increased it; nor did it operate in such a way as to increase privacy of conversation, and thus to make multi-party line service acceptable.

And so, because the distribution of costs among the patrons of a utility on the basis of the use made by each of them of the facilities of the utility, cannot be successfully controverted as equitable, and because the plan under consideration offered sound economic advantages, we were willing to try out this device—known as the Telechronometer—for measuring service in units of time.

The telechronometer is a meter resembling in appearance a gas or electric meter, except that it is considerably smaller. It is located at the subscriber's premises and moves forward at stated intervals when actuated by a reversal of current, which reversal is brought about by a pole-changer located at the central office. In the case of the Puget Sound Telephone Co., this reversal of actuating current occurs every 15 seconds.

The meter located at the premises of the subscriber receiving the call is not affected by this current. The meter of the calling party starts registering when the call reaches the operator. It does not register when the calling party is talking over the long distance lines.

In order to arrive at the schedule of rates, the meters were made operative under the flat rate for a period of several months. The service, of course, was unlimited, but it gave some idea as to the average use made of the telephone by subscribers of the various classes. Among other interesting things, it demonstrated that of the total number of time units ("telechrones") consumed by all subscribers in one month, two-thirds of such units of time-use were consumed by *one-third* of the subscribers, which ratio held for all classes of service.

Finally, a schedule of rates was worked out as shown below. This, however, was only tentative and subject to the need of such alteration as experience might dictate.

Effective as of April 1, 1922, the following rates went into effect.

Class.	Old gross flat rate.	New minimum gross rate.	Dec.	Inc.
1-party, business	$6.25	$5.50	$0.75	...
1-party, residence	3.75	5.50	...	$1.75
2-party, business	5.25	3.10	2.15	...
2-party, residence	3.00	3.10	...	.10
4-party, business	3.25	1.95	1.30	...
4-party, residence	2.25	1.95	.30	...
10-party, bus. or res.	...	1.25	...	...
10-party, bus., suburban	4.50	1.50	3.00	...
10-party, res., suburban	2.25	1.50	.75	...

These rates are monthly and are payable in advance. A discount of 25 cents will be allowed, if payment is made at the office of the company on or before the tenth day of the month for which service is billed.

The telephones supplied under the foregoing rates are of the wall type. Desk equipment will be furnished at 10 cents per month additional.

Under these rates, time use per month is included as follows:

One-party lines, 800 telechrones.
Two-party lines, 400 telechrones.
Four-party lines, 250 telechrones.
Ten-party lines, 150 telechrones.

All telechrones used in excess of the amount included in the minimum rate, 1 cent each.

A telechrone is one minute of outgoing local use.

The Puget Sound Telephone Co. operated under these rates until October 1, 1922, a period of six months. At that time, the measured schedule of rates was abandoned and the company returned to the flat rate in effect previous to April 1.

This step was not brought about because the measured rate schedule failed to accomplish the things we had in mind, but because of a family quarrel within the meter company which made it necessary to abandon this effort until the differences could be removed.

From year to year after that, the Puget Sound Telephone Co. continued to operate under its old schedule of flat rates. Meanwhile the facilities of the company were becoming more and more exhausted. The Everett exchange had grown from 3,994 stations as of June, 1916, to 8,307 stations as of December 20, 1926. We were once more back to the point of increasing our outside plant, of purchasing a new switchboard, of building a new building.

In short, we were about to expend as a minimum, $500,000 upon which the telephone users of Everett would be asked to pay interest, taxes, insurance and depreciation, thus adding some $80,000 a year to the telephone bills of our patrons, an increase in rental of almost $1 per station per month.

Moreover, instead of adding an appreciable number of persons to share this increase in revenue, we would, under an increase in rates, have lost many patrons and thus would have apportioned the added cost of supporting our telephone plant among a smaller number of persons than before. It is to be remembered also that such a move promised no improvement in service—merely an increased charge for it—an obviously unwise move not only from the standpoint of economy but of public good will.

But happily this move was avoided. During the winter of 1925 and 1926 the differences within the meter company were ironed out, and a policy was arrived at. Accordingly, a petition was circulated among the telephone users of Everett to determine whether or not a majority of them desired to return to a rate schedule based upon units of time.

As of January 1, 1926, there were 6,717 subscribers (not stations) at Everett. Of these, 3,880, or over 57 per cent, signed a petition requesting a return to the "pay-for-what-you-use" principle of telephone service. As of January 1, 1927, a schedule of rates based upon units of time, went into effect within the Everett exchange area. Following is a schedule of those rates:

Readiness to Serve and Incoming Traffic Charges.

The following readiness-to-serve and incoming traffic charges are payable monthly in advance. A discount of 25 cents will be allowed on the monthly bill if payment is made in full at the office of the company on or before the tenth day of the month for which service is billed:

	Wall.	Desk.
One-party line service	$3.25	$3.35
Two-party line service	2.25	2.35
Four-party line service	1.25	1.35
Ten-party line service	.75	.85

Service Beyond Primary Rate Area.

The above readiness-to-serve and incoming traffic charges apply only within the primary rate area. Beyond this area, one, two and four-party service will be furnished, subject to the following additional mileage charges. Ten-party line service will be furnished beyond the primary rate area subject to the rates provided in the schedule for suburban service. Per mile or fraction thereof—

One-party line service	$1.00
Two-party line service	.75
Four-party line service	.50

Suburban Service.

	Wall.	Desk.
Ten-party line service	$1.25	$1.35

Outgoing Local Traffic Charges.

The unit of measure for outgoing use shall be a "telechrone," which is, between the hours of 8:00 a. m. and 8:00 p. m., one minute in length, and between the hours of 8:00 p. m. and 8:00 a. m., two minutes in length.

In addition to the above readiness-to-serve and incoming traffic charges, outgoing local traffic, for the class of service specified, will be billed monthly in arrears at the following rates:

One-party line: Telechrones.	Rate per telechrone, mills.
First 400 @	9
Next 100 @	8
Next 100 @	7
Next 100 @	6
Next 100 @	5
Next 100 @	4
All over @	3

Two-party line: Telechrones.	Rate per telechrone, mills.
First 200 @	9
Next 100 @	8
Next 100 @	7
Next 100 @	6
Next 100 @	5
Next 100 @	4
All over @	3

Four-party line: Telechrones.	Rates per telechrone, mills.
First 100 @	9
Next 100 @	8
Next 100 @	7
Next 100 @	6
Next 100 @	5
Next 100 @	4
All over @	3

Ten-party line: Telechrones.	Rates per telechrone, mills.
First 40 @	9
Next 100 @	8
Next 100 @	7
Next 100 @	6
Next 100 @	5
Next 100 @	4
All over @	3

On the effective date of this supplement the present residence patrons will be reclassified so that:

a. One-party residence lines will be denominated two-party lines.
b. Two-party residence lines will be denominated four-party lines.
c. Four-party residence lines will be denominated ten-party lines.

And the two, four and ten-party rates respectively will be applied consistent with this reclassification.

In the event, however, that any patron so reclassified desires to return to his original classification within six months from the effective date of this supplement, the change will be made without charge by the telephone company. After this six months' period has elapsed, any change so requested will be subject to the regular charge provided in supplemental exchange rate schedule No. 14.

The new tariff also provided that "Patrons will be allowed any reasonable number of listings in the main compilation of the telephone directory without charge." Also, without charge "two listings for the primary station plus an additional listing for each additional trunk for additional station" are allowed in the classified section. No charge is made for listing a "joint user."

An extension wall telephone is furnished for 25 cents per month, and an extension desk telephone for 35 cents per month, whereas under the old flat rate an extension telephone ranged from 50 cents to $1.25 per month. Rates for miscellaneous equipment such as bells, gongs, jacks, etc., were reduced accordingly.

It will be noticed that there is no dis-

The Readiness to Serve Charges in this tariff (given on opposite page) was computed as shown in the tables below.

Investment per line, $175. (Subscribers' station equipment and drops not included.)
Investment per station in subscribers' station equipment, $20. (Drops included.)

One-party line.....	$175 plus (1x$20)	equals	$195	divided by 1	equals $195.00
Two-party line.....	175 plus (2x 20)	equals	215	divided by 2	equals 107.50
Four-party line.....	175 plus (4x 20)	equals	255	divided by 4	equals 63.75
*Ten-party line.....	175 plus (10x 20)	equals	375	divided by 10	equals 37.50
**Ten-party line.....	350 plus (10x 20)	equals	550	divided by 10	equals 55.00

Interest (8 per cent), Depeciation (6 per cent), Taxes and Insurance (2 per cent). Total, 16 per cent.

One-party line...	16% on $195.00	equals	$2.60 per month	plus $.25 meter rental..	$2.85
Two-party line...	16% on 107.50	equals	1.43 per month	plus .25 meter rental..	1.68
Four-party line...	16% on 63.75	equals	.83 per month	plus .25 meter rental..	1.10
*Ten-party line...	16% on 37.50	equals	.50 per month	plus .25 meter rental..	.75
**Ten-party line..	16% on 55.00	equals	.73 per month	plus .25 meter rental..	.98

*City. **Suburban.

Class.	Theoretical.	Practical.	With discount added.
One-party	$2.85	$3.00	$3.25
Two-party	1.68	2.00	2.25
Four-party	1.10	1.00	1.25
Ten-party	.75	.50	.75
Ten-party, suburban	.98	1.00	1.25

tinction between business and residence service. The reason for this is simple: The old excuse for charging business subscribers more because more could be charged, is no longer present.

The principle of charging each subscriber according to the amount of equipment necessary to supply him with service, and according to the amount of use which he makes of that equipment, demands that business houses shall no longer be asked to defray the costs of supplying service to residences.

Another factor of the foregoing schedule will be noticed, the provision for a reduction in the price of outgoing service after 8:00 p. m. as a means to remove "visiting" from the business day.

There is a slight difference between the schedule of measured rates effective in 1922 and the schedule effective today. The 1922 schedule was of a semi flat-rate character, whereas the present one is in every sense measured. For our purposes, here, however, these differences are minor, as our experience under both offers ample evidence of the fact that our anticipations have been justified. Let us examine, therefore, the results of the "pay-for-what-you-use" principle of telephone service.

1. The length of conversations—holding time—has been reduced 50 per cent. Whereas, under the old flat rate, the average holding time was about two minutes, nevertheless both circuits and trunks were sometimes tied up for 20 minutes or half an hour.

Even four-party service was subject to much interference, and this affected, of course, not only the service on four-party lines but the entire system as well, since 81 per cent of our subscribers were on these lines. Under the metered rate, the average holding time is one minute, and a party line with ten subscribers is practically free from interference. And it will not be possible under our plan for particularly talkative subscribers to obstruct service.

Within a month or two, we will have figures as to the average use made of the telephone by subscribers of each class of service. Let us say that the average use of two-party subscribers is 320 minutes per month, then whenever a two-party subscriber uses 640 minutes per month, or twice as much as the average use, this subscriber will be required to take one-party service. The same principle would apply to four and ten-party subscribers.

This practice will obviously protect the principle of party-line service from inconsiderate abuse on the part of particular individuals.

2. Privacy has been insured. Our patrons do not listen in because they have learned that it costs.

3. Party-line service has been made acceptable. Perhaps nowhere in the world is service so instantaneous. A ten-party line at Everett is now a better service than that formerly furnished as four. The busy line, which interferes with the completion of a call, will on an average be available for service in less than one minute.

Of the 4,360 four-party *residence* subscribers which became ten-party subscribers automatically, as of January 1, 1927, only nine have requested a return to four-party service. On the other hand, 32 subscribers (mostly business) have requested a change from four to ten-party service.

The popularity of party-line service is also shown by the large increase in subscribers under measured rates. Since the adoption of the new rate schedule January 1, the Puget Sound Telephone Co. has received 1,359 applications for telephone service from a possible total of 3,161 homes without service as of December 31, 1926, at which time in the area served by the Everett exchange there was one telephone for each four inhabitants.

There are now in the Everett exchange area only 1,802 residences without a telephone out of a total of 7,437. During the entire year of 1926, the growth in stations at the Everett exchange was 239. The first two months of measured rate service, therefore, has added almost six times as many subscribers as we gained in the entire year of 1926. We lost but six subscribers as a result of the installation of measured service.

In any locality, people will be found whose income is such that they are just below that margin which makes it possible for them to have a telephone. They may not have a great use for it, but they want it when they want it. Metered service, offered as in our case, for as little as 50 cents per month, makes it possible for such persons to have a telephone for their limited needs without being compelled to pay a price that must be charged on a flat-rate basis.

4. The value of the telephone has been increased since more people may be reached over it. In addition to the increase in subscribers already noted, approximately 500 persons not heretofore listed, now appear in the telephone directory.

In addition to that, the classified section is made to include any classification desired. Tradesmen, workers of any kind, are now listed in the directory in such a way that their services are easily available to persons in need of help. Our telephone directory is rapidly becoming a city directory. Since all persons listed place and receive calls, the cost of such listings is paid for by the added use made of the telephone.

Under the old system of flat rates, the classified section of the directory was, of course, a great assistance to the person with an established business. But it offered nothing to the poor widow who makes her living by taking in washing, to the shingle weaver, to the seamstress, to any person with a vacation the earnings from which are insufficient to pay the charges on a business telephone.

As things were, the person dependent upon a daily wage had no ready means of offering his services, and people in search of help likewise had no means of finding it. The system of flat rates, with its differentiation between business and residence telephones, its charges to cover directory listings, restricted the usefulness of the telephone to the extent that it did not offer the unserved class the same means for disposing of services as it did to the great class of merchants.

The many persons, who could not afford under the old flat rate any telephone at all, to say nothing of a business telephone, were really no worse off than a traveler would be who must take a drawing room or walk. Heretofore these people, so far as the telephone is concerned, simply have not been considered as being in the scheme of things. But under the telechronometer system, such persons not only can afford a telephone—they cannot afford to be without it.

To measure service in units of time, therefore, is to democratize the telephone.

5. The telephone company has enlarged its sources of revenue, while at the same time it has reduced the total amount which it must receive from its old subscribers.

That is to say, those who received service under flat rates, are now paying, as a whole, less than they formerly paid; and this difference is being made up by the 1,300 new stations which have been added since the first of the year.

The actual figures for the month of February, 1927, show that 75 per cent of our patrons paid 27.2 per cent less than they would have paid under flat rates, and 25 per cent paid 23.1 per cent more.

But the number of persons sharing in the cost of supporting the telephone system of Everett is increased not only by the addition of new subscribers. The "pay-for-what-you-use" principle is passed on by subscribers to non-subscribers making use of their telephones. The introduction of metered service has resulted in a new social consciousness eliminating the telephone "sponge."

Since service is charged for in proportion to use, the practice of borrowing a neighbor's telephone has become unpopular and, with the introduction of some 1,300 new stations, has practically disappeared.

Moreover, under the "pay-for-what-you-use" principle of telephone service, the tendency to do away with the telephone "sponge" has resulted in an increase in the use of pay stations, thus again increasing the number of persons who contribute to the support of the telephone system at Everett.

The average monthly receipts from coin boxes for outgoing local use just previous to the introduction of the telechronometer was $432 per month. During the month of February, 1927, the income from nickel coin boxes was $639, an increase of $207 per month, or 48 per cent.

6. We have more than doubled the number of persons who can be served with our equipment. The present outside plant, switchboard and housing facilities are now sufficient to take care of the growth of Everett for many years. Therefore we have not only avoided the need for an increase in rates, but we have actually lowered them. At the same time we have protected our revenue and preserved good will.

Moreover, the reduced night rate, which draws calls away from the peak load of the day and increases the light load at night, enables the company to increase again the usefulness of its plant inasmuch as the capacity of a telephone utility to give service is determined by its capacity under peak conditions.

7. We have arrived at a basis of charge, founded not upon the principle of getting revenue at the easiest place, but of charging for service equitably and scientifically—a thing which even those users of the telephone who pay more find it difficult to criticize.

If selling exchange telephone service under a flat rate schedule is a good plan, why is it not generally applied to long distance service? The answer is apparent. The additional necessary investment in toll plant would make the rates prohibitive.

8. We have simplified our rate problem. Future increases will be secured by shortening the length of the "telechrone."

The readiness-to-serve charge, it will be seen from the table already shown, represents a charge to cover interest on investment, depreciation, taxes and insurance. Such a charge is in every telephone bill of every telephone company, although it may not be segregated and made to appear as such.

The readiness-to-serve charge is that amount which the owners of a utility are entitled to receive as owners—that is to say, it is the amount which they should be paid as rent for their idle plant. Suppose that the owners of a utility were to say to the people of a community: "Here is our telephone plant. Perhaps you would rather rent this property from us and operate it yourselves. If so, we will rent it to you for —— dollars per month."

And suppose that the people of the community decided to rent the plant, and this rental was distributed among the users of it according to the amount of equipment required by each user. These charges then would resemble in principle our readiness-to-serve charge.

And if the people, operating this utility which they had rented from its owners, were to charge the users of that utility on amount each month sufficient to pay the operating expenses, and were to distribute that charge according to the minutes of use made of the plant, such a charge would resemble in principle the charge which now appears on our bills for outgoing local use.

The effect of such a rate is more far-reaching than will be obvious at first. Once a utility has determined the value of its plant, a readiness-to-serve charge may be arrived at which will allow the utility a fair return on its investment, provide a sum sufficient to pay taxes and insurance and to offset depreciation. In a very real sense, this is all that a utility, as such, ever gets. The remainder of its income—that is to say, the amount which it receives for service rendered—goes to pay its operating expenses.

It will be apparent, therefore, that such a schedule of rates places a telephone company in an entirely new light with reference to its rate problem. Assuming that it is entitled to receive an amount which will compensate it for idle plant, and that after that the charge for the use of that plant shall be enough, and no more than enough, to pay the operating expenses, then it becomes a simple matter to make the charge for outgoing service conform exactly to the operating expense.

When the telephone users pay to the company less than it needs for operating expenses, the charge per unit of outgoing use obviously needs to be increased, and unless the company is badly managed no reasonable objection can be made to such an increase, for it simply represents a charge which, in the nature of things, must be made for telephone service.

On the other hand, if the users pay to the company more than it needs for operating expenses, the utility can be required to return to each subscriber his proportional amount of such over-payment by allowing the necessary discount on their bills.

There need no longer be any doubt as to the equity of a rate. The equity of the readiness-to-serve charge is only as complex as the problem of arriving at a value of the utility. And the charge to be made for each unit of outgoing service will depend entirely upon the use which the people of the community make of their telephones.

The amount to be charged per unit of outgoing service is in the hands of the people. Their habits will actually determine this. If they make little use of the telephone, this charge will increase. If they make much use, it will decrease.

A flexible basis of arriving at rates is thus made possible, which is not dependent upon whim or mere speculation. Increases and decreases in the charge per unit of outgoing use, or in the length of the unit—the telechrone—could be made intelligible to the public. The effect of this would be to do away with much of the present need for rate cases and rate agitation.

But most of all, the general tendency of rates based upon units of time to make party-line service acceptable and thus to avoid a continual increase in rates, offers to the telephone utility a solution to its rate problems which it cannot forever continue to ignore. And the attitude of

Spring Bouquets from Widely-Scattered Telephone Men.

Clarence W. Hanson, manager of the Salemsborg Farmers Telephone Co., having headquarters at Smolan, Kans., recently sent in the renewal of his TELEPHONY subscription, with the comment: "I could not get along without your journal, and would not try to if the subscription price were double."

Writing from St. Johns, Newfoundland, Chas. S. Collett, of the Avalon Telephone Co., remitted for a renewal of his subscription and added this postscript: "I have been a subscriber to TELEPHONY for several years, and I find it very interesting."

"Can't get along without TELEPHONY, nor do I want to," says R. G. Roadstrum, of Galesburg, Ill., in a letter enclosing his renewal.

Earl F. Stice, well-known among Illinois telephone men, in a recent letter forwarding his renewal subscription, said: "I don't want to be without TELEPHONY It keeps one in close touch with the industry."

any telephone company to the question of flat rates versus rates based upon units of time will be determined by its attitude toward the economics of the matter.

If it prefers to employ much capital and much equipment, it will wish to discourage the use of party-lines, and it will, therefore, prefer a flat rate. If on the other hand it believes that it is desirable to furnish telephone service at the least possible price, then it will further the development of party-line business and will accordingly favor a rate based upon units of time.

If two people can make use of a given instrumentality where only one made use of it before, that, we believe, is sound economy. It cannot fail to win public confidence—and it cannot be successfully attacked.

If it is not already apparent, it some time will be that the present practice of advancing telephone rates, of following each new increase with an effort to secure another, must come to an end not only because it is economically unsound and now unnecessary, but because it is sure to destroy that good will upon which a utility must finally depend.

Telephone service is the cheapest thing, in proportion to its value, purchased by the American public. This does not, however, relieve the telephone industry of the responsibility of doing everything possible to reduce still further the charge for service.

It is natural, perhaps, that the telephone industry, which is still but a half-century old, should have concentrated upon the solution of technical problems. But it is regrettable that this has been so absorbing as to exclude in any serious sense a study of telephone economics.

The industry has been so much concerned with the mastery of technique, that it has almost forgotten to consider the economic results of that mastery. As technical problems were solved, economic problems were created, until today the telephone industry, like the proverbial ostrich with its head in the sand, is still unaware of its precarious position.

Ohio Men to Consider Many Matters at Convention.

The Ohio Independent Telephone Association will be held at the New Neil House, Columbus, beginning Wednesday, April 27, at 2 o'clock p. m. and closing Friday, April 29, at noon.

The program, announced by Frank L. McKinney, secretary-treasurer, contains a number of unusually interesting addresses as well as discussions on a variety of subjects.

There will be a theater party, tickets for which will be furnished without charge to all convention visitors when they register. Real entertainers will provide entertainment during the banquet before the dance on Thursday evening.

The sessions of the traffic conference will be in charge of R. F. Pagels, traffic manager of the Warren & Niles Telephone Co., Warren.

There will be an exposition of telephone manufacturers and supplies arranged by associate members of the association, along with the exhibits of other manufacturers, jobbers and service companies and individuals, which will be well worth intensive study by every person attending the convention. The forenoon and evening of the first day of the convention have been set aside for the inspection of these exhibits.

The program in full follows:

WEDNESDAY, 2:00 P. M.

Address of welcome by Jas. J. Thomas, mayor of Columbus.

Response to address of welcome by J. Warren Safford, Troy.

Annual report of the president, by C. L. Jones, Athens.

Annual report of the secretary-treasurer, by Frank L. McKinney, Columbus.

Appointment of committees.

"A Review of National Affairs," by F. P. MacKinnon, president, United States Independent Telephone Association, Chicago.

General discussion.

THURSDAY, 10 A. M.

"Application and Effect of the New Interstate Commerce Commission Order with Regard to Depreciation." Round table discussion directed by an expert in depreciation and accounting.

"Keeping Rates in Line With Values and Expenses," by Robert H. Jackson, general counsel for the Jamestown Telephone Corp., Jamestown, N. Y.

Introducing E. F. Carter, president of The Ohio Bell Telephone Co., Cleveland, to the Independent telephone men of Ohio. Remarks by Mr. Carter.

"Some New Faces in the Ohio Independent Group." Introduction of officials and executives who have become identified with the industry during recent times.

"What Your Association Means to You," by J. G. Ihmsen, Albany, N. Y., vice-president and general manager of The Up-State Telephone Association of New York.

"Things to Know About Wired Radio." "Fees and Licenses," by Frederick Frankel, Cleveland. "The Physical Problems," by J. O. Campbell, Norwalk. "Selling the Service," by Geo. B. Quatman, Sidney.

"Utility Taxation and the Uniform Rule," Allen G. Aigler, Bellevue, chairman taxation committee, Ohio senate.

Round table discussion of matters of general interest to the telephone industry in Ohio.

Introduction of visitors.

Election of directors.

THURSDAY, 6:00 P. M.

Banquet and dance.

FRIDAY, 10 A. M.

"The Price Trend for Telephone Commodities," by B. A. Ogden, Columbus.

"Moving Pole Lines in the Most Economical Manner," by Jeff Smith, Cadiz; Frank A. Binkley, Bellefontaine.

"Trees and Tree Trimming," by Harry C. Hyatt, Cleveland.

"How We Estimate the Future Demand for Service and Prepare to Handle It," by C. W. Kugelman, Portsmouth.

"Extension Service Sales," by W. A. Barry, Cleveland.

Round table discussion.

Fourth Annual Traffic Conference

THURSDAY, 10 A. M.

Reception committee—Miss Grace Ryland, Ashland; Miss Grace Connolly, Lima; Mrs. Grace Peltier, Bellevue; Miss Ida Hootman, Cambridge.

"Problems of a Traveling Chief Operator," by Grace Peltier, traveling chief operator, Northern Ohio & Telephone Co., Bellevue.

"How I Determine Force Requirements and Adjust Schedules," by Miss Grace Ryland, traffic chief, Ashland Telephone Co., Ashland.

"What's in a Voice?" by Ada Hootman, chief operator, Cambridge Home Telephone Co., Cambridge.

"Interesting Features on Toll Operating," by Nell Murray, toll chief operator, Lima Telephone & Telegraph Co., Lima.

FRIDAY, 10 A. M.

Continuation of traffic discussions opened at earlier meetings.

Special program of traffic studies.

Time-Saving Features Installed in Hastings, Neb., Exchange.

The Lincoln Telephone & Telegraph Co. has installed in its Hastings exchange, said to be the only foot-controlled bell-ringing equipment in Nebraska, an invention that is already recognized as one of the real improvements in telephone exchanges. Heretofore the pushing of a button was necessary to ring the bell, and the foot operation means much saving of time for operators.

The Hastings exchange has had two new positions installed recently, which will take care of the expected growth for the next three years. Under the system of operation when a receiver is taken from the hook, it will be recorded on three positions, and the first one to answer automatically cuts the other two. R. H. Ojers, the manager, says that this more than doubles the speed of handling calls over the old system.

Paris-Venice Now Have Direct Toll Service.

A new, direct telephone service has just been opened between Venice and Paris. It will presumably be extended to London before long.

Though the distance between Paris and Venice is less than that between London and Berlin, the intervening Alps, in the former case, have caused exceptional difficulties. The London-Berlin service has been in use for some time past.

Automatic Telephone Fundamentals

This Is One of Series of Articles Explaining in Simple Terms the Mechanical and Electrical Basis of the Strowger Automatic Telephone System, Which Are Appearing Each Week in TELEPHONY — Part 16, Relays; Method of Operation

By Arthur Bessey Smith, Ph. D.

As regards their mode of operation, relays are of two kinds—the ordinary and the escapement type. The ordinary relay performs a switching action when energized, and when de-energized restores the circuits to their original condition. The escapement type of relay does not do so.

The circuits are switched by the operation of the relay but must be returned to normal by some other magnet or force. There are two kinds of escapement relays—the direct and the back-acting.

A direct escapement relay, Fig. 73, is one which, upon energizing, unlocks a catch that allows the springs to operate and to perform certain changes. When the relay becomes de-energized, nothing happens. A restoring magnet is required to pull the main spring back to normal and catch it under the latch ready for the next operation of the relay.

The back-acting escapement relay is characterized by no switching action upon energization, but the movement of the switch when the relay is de-energized. This may be done in either of two ways. One of them, Fig. 74, employs a pawl attached to the armature of the relay.

When the relay is energized, the pawl is pulled back and catches a tooth on the sector. When the relay is de-energized, the spring which controls the armature pulls the armature and pawl so as to rotate the sector and wiper to bring the latter from contact 1 to contact 2 against the force of a spring. A detent retains the sector and wiper in this position.

As many contacts may be provided as thought necessary. The restoring magnet, by attracting its armature, lifts both the detent and the pawl away from the sector teeth, allowing the spring to rotate the wiper back to its normal contact 1.

A type of back-acting escapement relay, formerly much used, is found, Fig. 75, in the side switch and private magnet. It has an escapement consisting of four teeth mounted on the armature lever of the relay. The triangular end of a finger which controls the position of the wiper, rests against the first bottom tooth, and the spring tends to pull the wiper and finger in a clockwise direction.

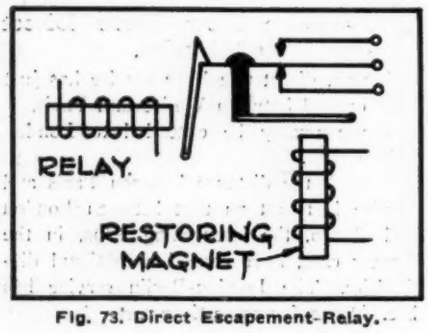


Fig. 73. Direct Escapement Relay.

When the relay is energized, the lever moves downward, allowing the triangular end of the finger to slip from the first lower tooth to the first upper tooth. This advances the wiper very slightly, not enough to change the connection.

The end of the finger has, however, moved forward enough so that when the relay is de-energized the first lower tooth will be unable to catch it, and the finger will slip forward and strike the second lower tooth. This moves the wiper from contact 1 to contact 2. A repetition of this action will move the wiper from contact 2 to contact 3.

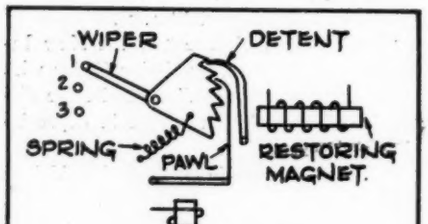


Fig. 74. Back-Acting Escapement Relay with Pawl and Ratchet.

The restoring magnet has an armature with a long curved end, which acts directly upon the side switch and pushes the finger and wiper back to their normal position.

Relays may be combined with each other, and with other apparatus in a large variety of ways. The longer a person works with relays, the more things he will discover that can be done with them. The modern relay has become an exceedingly reliable piece of apparatus and reveals increasing possibilities. A few of the interesting relations are given here.

If it is desired to secure the automatic vibration of a relay or magnet, it may be done by wiring the winding in series with a break contact on the relay itself and the battery supplying the current. The relay will then vibrate exactly after the manner of a door bell. The core will energize, attract the armature, break the circuit, and thereby cut off the current from the coil.

The coil will de-energize, allowing the armature to fall back, which will close the circuit and re-energize the coil. This causes the armature to pull up again, continuing vibration as long as current is supplied.

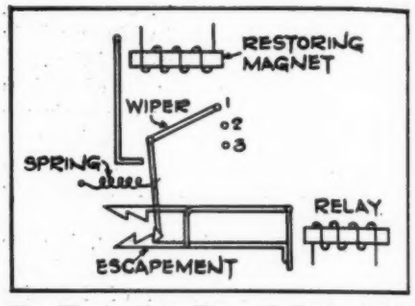


Fig. 75. Another Type of Back Acting Escapement Relay.

If the relay is of the quick-acting type, the vibration will be very rapid, amounting to a continuous buzz or hum. If the relay has a few short-circuited turns, or be equipped with a copper sleeve or collar, the vibration will be much slower. The armature will apparently stick to the core the major portion of the time, falling back only long enough to energize the core and pulling up quickly again.

A slow-acting relay may be utilized, Fig. 76, to operate another magnet or relay. This other magnet, *A*, is wired in series with the slow relay, *B*, and the battery. When the key is closed, both *A* and *B* will energize and attract their armatures. *A* will fall back when *B* opens the circuit, but *B* will remain energized until its magnetism has died away, which, on account of the copper collar, will be after *A* has let go.

Any desired speed may be obtained by proper adjustment of the spring tension and residual air gap on the armature of relay *B*, together with the stroke and action of its contact springs.

The auxiliary or vibrating relay may be arranged in parallel with the relay which is to be operated, Fig. 77. Both relays are attached to one terminal of the battery. Relay *A* has its winding connected through a back contact on relay *B*. Relay *B* has its winding connected through a front contact of relay *A*.

When the key is closed, relay *A* will first energize. The action of relay *A* closes circuit for relay *B* and pulls it up. The pulling-up of relay *B* breaks the circuit of relay *A* and causes it to fall back. The indefinite continuance of this vibration is evident. Quite a range in rapidity may be secured by making one or both of the relays slow-acting.

The two relays, *A* and *B*, may be arranged in series and be allowed to short-circuit each other out, Fig. 78. Normally, relay *A* is in circuit, while *B* is short-circuited. When the key is closed, relay *A* pulls up and takes the short-circuit from the winding of relay *B*. Relay *B* thereupon attracts its armature and short-circuits the armature of relay *A*.

Relay *A* now falls back and short-circuits relay *B* so that for the moment both relays are short-circuited and the resistance alone regulates the flow of current. Relay *B*, however, soon falls back and takes the short-circuit from relay *A*, so that the cycle begins all over again. This arrangement is not very much used.

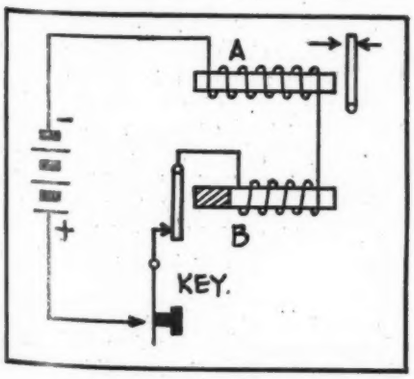
If it is desired to secure a rather slow action, several slow-acting relays may be grouped together and made to act one after another, Fig. 79. The windings of all the relays may be attached to one terminal of the battery.

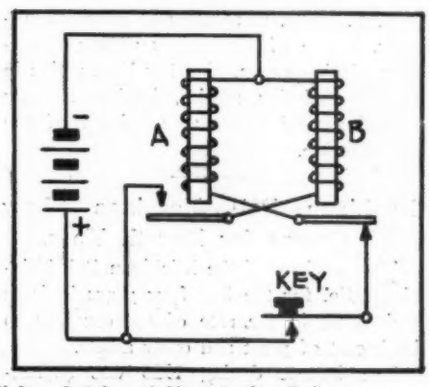
When the key is closed, current flows from the positive terminal of the battery through a back contact on the last relay to the winding of the first relay. The first relay, on pulling up, energizes the third, etc., to the end. The last relay upon energizing, cuts the current from the first relay. Being slow-acting it will hang for a moment before falling back. When it does so it de-energizes the second relay, which will also stick a moment before releasing. When this motion reaches the last relay it will fall back and connect up the circuit for the first relay again. Thus the cycle will repeat itself indefinitely until the key is opened.

The movement is characterized by the quick energization of all the relays, one after another, followed by very slow release, so that the armatures remain attracted for the greater portion of the time.

Many other combinations are possible and the reader is recommended to use his ingenuity in discovering those which will best serve his purposes.

(To be continued.)





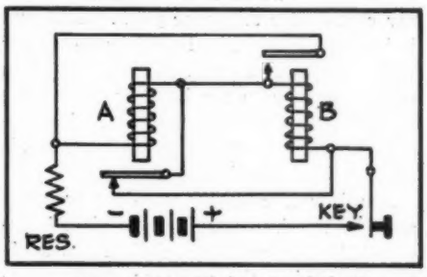
Figs. 76–77. Circuit Combinations Utilizing Quick and Slow-Acting Relays.

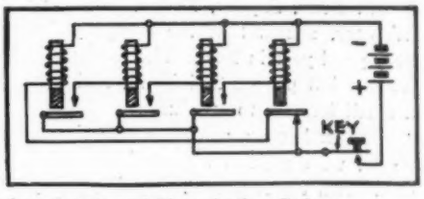
Carnegie Scientists Prove Existence of Radio "Ceiling."

Existence of a layer in the upper air which bends radio waves back to earth has been verified, the Carnegie Institution announced last month, in experiments conducted by Dr. G. Beit and Dr. M. A. Tuve, research investigators of its department of terrestrial magnetism.

Were it not for that "ceiling," it was explained, the radio waves would pass steadily outward into space, rendering long-distance transmission impossible.

In a series of experiments during 1926, in cooperation with the Naval Research Laboratory, the Bureau of Standards and other agencies, the investigators found that a receiver at a given point, under favorable conditions, would record at least two pulses for every pulse sent out by the generating station.





Figs. 78–79. Circuit Combinations Utilizing Quick and Slow-Acting Relays.

One comes by a direct horizontal path, while the other travels by way of the "ceiling," reaching the receiver as an "echo" or "reflection." As the latter path is the longer of the two, the pulse traversing it arrives about one-thousandth of a second later.

By ingenious devices the investigators succeeded in recording photographically these pulses and in measuring the difference in time of arrival. This enabled them to compute the effective height of the "ceiling," which they found generally to be about 100 miles above the earth, although it rose and fell within a range of from 50 to 130 miles.

The experiments showed that variations in the height of this layer are often very sudden, and that probably it is at a greater height in fall than in summer and in the afternoon than in the morning.

They also revealed that changes in the layer account for many of the peculiarities of radio transmission. "Fading," for example, was found to be due in part to a change in intensity of reflection and not altogether to the inteference of the ground and reflected waves.

Again, this study showed that the quality of the reflected waves may be affected by the character of the reflecting surface, a bumpy or corrugated surface producing "multiple reflections," causing interference, confusion, and even "fading" when waves happened to neutralize one another.

For nearly a quarter of a century scientists have assumed on theoretical grounds that the upper air contains an ionized layer, which is a good conductor of magnetic energy and which acts to reflect or refract radio waves back to earth.

Dr. Breit and Dr. Tuve are said by the Carnegie Institution to be the first to have conclusively proved its existence by experimentation.

One Second Per Call Saved by Operator's "Thank You."

The new system by which the Southwestern Bell Telephone Co. operators in Oklahoma say "thank you" instead of repeating the number when a call is made, is meeting the approval of the public, according to R. J. Benzel, general manager.

In the Oklahoma City office more than 300,000 calls are put through daily. It is brought out by figures that 90 per cent of these calls did not need confirmation through repetition of the number by the operator.

In order that the subscriber or caller would know that the operator heard the number called, it was decided to have the operator say "thank you." This cuts off an average of one second on each call, or 300,000 seconds daily in Oklahoma City, according to Mr. Benzel, thus speeding up the service materially.

"If a subscriber will remember to give the operator the number clearly and slowly, much time can be saved in putting through his call," Mr. Benzel said. "Of course, 10 per cent will continue to be careless, thus resulting in the operator not understanding correctly the right number when it is given. The amount of wrong numbers due to the fault of the operators is ½ of 1 per cent."

Prices in the Metal Markets.

New York, April 18.—Copper—Firm; electrolytic, spot and futures, 13.00@13.12c. Tin—Firm; spot and nearby, $68.50; June, $67.50. Iron—Steady; No. 2 f. o. b. eastern Pennsylvania, $21.00@21.50; No. 2 f. o. b. Buffalo, $17.75@18.00; No. 2 f. o. b. Alabama, $18.00. Lead—Easy; spot, 7.15c. Zinc—Steady.

The Financial Side of Companies

Items of Interest Regarding Financial Matters of Independent and Bell Telephone Companies—Facts and Figures from Annual Reports Show Healthy Growth of Industry — Activities in Construction Work — Some Statistics

Nebraska Company Paid Its Usual 8 Per Cent Dividend.

The annual report of the stockholders of the Farmers Telephone Co., of Dodge County, Nebraska, which has exchanges at North Bend, Snyder, Dodge, Scribner and Webster, shows that the company had a very good year in 1926. The company paid its usual 8 per cent dividend, and carried a small balance to surplus.

The exchanges are now all in good shape, with a good share of the cable in each town underground. During this year the company will pay special attention to farm lines, rebuilding some and fixing up weak places in others, etc.

In the report to the stockholders, President J. F. Drenguis said:

"Steady improvement has been made in the speed and accuracy of handling telephone calls, and also in the handling of such important factors of service as the installation and moving of telephones, furnishing of directories, keeping lines in good working condition, and the many other factors, the satisfactory handling of which is of greatest importance to the telephone user.

Particular effort has been made to improve toll and long distant service. It is now possible to complete a very large percentage of toll connections while the calling party remains at the telephone. By virtue of existing relations, our subscribers are provided with the maximum service at a minimum cost.

We have always welcomed regulation by public authorities, and we recognize that not only our stockholders but the public generally are entitled to know how we are carrying on our stewardship. Criticism may be a most useful aid to management, and we welcome constructive criticism where it is sincere.

In the telephone business the foundation of good public relations is satisfactory service at the lowest possible rates. Satisfactory service, of course, includes not only the setting up of telephone connections but the removal of troubles and their prevention as far as possible, courteous and effective handling of inquiries of all kinds, and the many other factors which comprise the contacts with our customers.

There can be nothing inconsistent between our aims and purposes and the public good. Our service has always been furnished at cost. We did not make wartime profits, and the present rates in effect on our system are considerable below the average.

Our balance sheet shows we do not have any bills payable, notes payable or funded debt. Our reserve for depreciation and surplus now amounts to $88,684.12 or 60 per cent of the telephone plant. This sum is invested in plant and used by the public without interest charge. This reserve is a guarantee both to the investor and to the subscriber—to the investor that his principal is safe, and to the subscriber that his service will be maintained.

A utility like ours must do more than meet its requirements for operation, interest, dividends, and depreciation. In addition to paying the ordinary running expenses of the company, there must be a margin. The purpose of this margin is not for enlarging the business.

This surplus is necessary to carry the company through periods of depression and to provide against contingencies, which by the utmost care it is not humanly possible to forecast. It makes certain the service of the future and insures the company's ability to meet the continual demand which the public creates for more and better service."

The company's building program is fully financed and no additional securities or stock are now being offered for sale. The outstanding capital stock of the company now amounts to less than one-half of the net assets devoted to earning a return on the stock. The company now has assets of $169,785.55, and a capital stock of $72,570.

The gross revenues for 1926 were $36,934.54, of which $13,584.75 were derived from city subscribers, and 16,742.35 from rural subscribers. The toll business provided revenues of $5,613 and switching, $474. The net was $6,396.43 after setting aside $11,036.93 for maintenance, $3,363.07 for depreciation, $9,769.17 for operating expense, $5,367.17 for commercial expense and $1,001.77 for taxes.

The company had 1,660 telephones in service on January 1, 1926, and 1,708 in service December 31, 1926, a gain of 48 telephones.

C. L. Kelly, secretary and general manager, is one of Nebraska's most progressive telephone men. He has been active in state association affairs, having recently served several terms as president of the organization.

Michigan Bell Earnings Show Decrease for Fourth Year.

The earnings of the Michigan Bell Telephone Co. for the last four years indicate a decrease in the rate of net earnings to book cost of plant and other assets.

The income during 1926 was $4,288,317.02, as compared with $4,694,329.56 in 1925.

The report shows an increase in the average amount of plant in service of $14,882,000, with an increase of net earnings of $440,000, less than 3 per cent on the added investment.

Earnings for the last four years were as follows:

1923	7.01 per cent
1924	6.85 per cent
1925	6.46 per cent
1926	5.89 per cent

President Foraker said in his report that expenses have increased relatively more than revenues, primarily because of large additions to plant at present-day prices, without adequate rate adjustments. It is shown that prices for labor and material were higher last year than the average prices over the period in which the existing plant was built and that the book cost of plant in service increased relatively more than the number of telephones.

The descriptive income statement shows total operating revenues of $30,606,438.08 for 1926, compared with $26,883,523.92 the preceding year, and operating expenses of $21,120,469.26, an increase from operating expenses of $18,896,202.46 in 1925.

Uncollectable operating revenues for 1926 were $184,079.25 and taxes assignable to operations were $2,764,305.93, compared with $2,270,085.41 in 1925, giving an operating income of $5,991,583.64.

Net non-operating income was $168,519.99, making the total gross income $6,160,103.63. From this amount is deducted $261,583.20 for rent and miscellaneous items; $82,452.71 funded debt interest, and $1,527,750.70 other interest, including that paid on loans made principally for the purpose of expanding plant and adding to service facilities. This leaves the balance net income $4,288,317.02.

Dividend payments to owners of outstanding capital stock were $4,000,000 and $100,000 was added to the employes' benefit reserve. Balance for corporate surplus is $188,317.02 for the year.

The report also shows that the company had 547,850 telephones in service at the end of the year, an increase of 46,567 during 1926. These telephones were served through 251 central offices at 222 exchanges, miles of wire in service was 2,116,163, an increase of 425,681 during the year. Machine switching or dial telephones numbered 127,000, or 23 per cent of the total.

Taxes paid per telephone were more than $5, an increase from less than $2 in 1919. Expenditures for plant additions were

$21,059,885, compared with $8,312,417 in 1922, 8,245,287 in 1923, $13,451,875 in 1924, and $19,287,831 in 1925.

International T. & T. Has 52 Per Cent Increase in Earnings.

A recent statement of the International Telephone & Telegraph Corp. shows that the preliminary consolidated net income of the corporation and its associated companies for 1926, after interest and all prior charges were deducted, amounted to $7,105,206, compared with earnings of $4,668,228 in 1925. The increase was $2,436,978, or 52 per cent.

The earnings are equivalent to $12.13 a share earned on all stock outstanding at the end of 1926, as compared with $11.90 a share at the end of 1925. On the basis of the average number of shares outstanding during the year, the earnings shown are equivalent to $16.03 a share, against $13.08 in 1925.

A part of this increase in the earnings for the year is due to additional companies included in the consolidation but the greater part is the result of the improvement in the earnings of the system telephone and manufacturing properties.

During the year, the surplus account increased from $6,246,837.18 to $10,075,854.93, after allowing for the payment of the regular dividends of 6 per cent for the year. Current assets at December 31, 1926, amounted to $44,698,542.61 and current liabilities were $15,640,207.36.

The following table gives a comparison of the consolidated income and surplus accounts for the last two years. The statement for 1926 is subject to minor corrections when the final reports from foreign countries are received and is based on cabled reports to a certain extent.

	1926.	1925.
Gross earnings	$22,680,845	$17,036,999
Expenses	11,615,603	9,018,677
Net earnings	$11,065,242	$ 8,018,322
Charges of associated companies	2,585,036	1,975,094
Interest on debenture bonds	1,375,000	1,375,000
Net income	$ 7,105,206	$ 4,668,228
Dividends preferred or accrued	2,672,779	1,727,232
Surplus	$ 4,432,427	$ 2,940,996
P. & L. surplus	9,164,209	5,367,956
Capital surplus	911,646	878,881
Total surplus	$10,075,855	$ 6,246,837

Mountain States' 1926 Report Shows Excellent Condition.

Stockholders of the Mountain States Telephone & Telegraph Co. in their annual meeting received an encouraging report of the company's activities during 1926. Total revenues of $18,549,000 were reported, an increase of nearly $1,500,000 over the year previous. Net income amounted to $4,183,193 or better than $10.85 a share for the common stock. This is more than a dollar a share above the 1925 earnings of $9.75 a share.

The company has no funded debt and only one class of stock outstanding. Its capital consists of the proceeds of the sale of this stock and moneys advanced on the company's notes by the American Telephone & Telegraph Co.

Among the larger items of operating expenses is that of taxes, the requirements during 1926 amounting to $1,901,165. This is equal to more than 10 per cent of the company's gross operating revenue.

Additions to plant in the territory served by the company amounted to over $6,000,000, necessitated by a steady annual increase in population and to new and additional uses for the telephone.

The figures at the close of the year showed a net gain of 14,285 stations in use and approximately 58,000 miles of new wire connected. This gives the company a total of 423,984 stations and 1,060,703 miles of wire in service.

Report of Pacific Bell Indicates Growth on Pacific Coast.

The consolidated income statement of the Pacific Telephone & Telegraph Co. shows a net income of $10,104,229.59, after taxes, depreciation, interest, etc., equivalent after preferred dividends, to $12.05 a share earned on $43,000,000 common stock. This compares with $8,802,350, or $9.03 a share in 1925.

The consolidated income statement for 1926 is as follows:

Telephone operating revenues		$75,187,363.82
Telephone operating expenses		50,779,840.76
Net telephone operating revenue		$24,407,523.06
Deductions—Uncollectible operating revenues	$ 615,200.00	
Taxes assignable to operations	6,621,158.96	7,236,358.96
Operating income		$17,171,164.10
Net non-operating income		760,176.26
Total gross income		$17,931,340.36
Deductions: Funded debt interest	$3,531,741.10	
Other interest	3,433,835.58	
Debt discount and expense	186,888.40	
Rent and miscellaneous	674,645.69	7,827,110.77
Balance net income		$10,104,229.59
Dividends—Preferred stock	$4,920,000.00	
Common stock	3,010,000.00	
Miscellaneous appropriations of income	500,000.00	8,430,000.00
Balance for corporate surplus		$ 1,674,229.59

The company had a sound growth during the year, both in local and toll business. There were 1,294,290 stations owned by the company's system at the end of the year, an increase of 98,827 over the preceding year. The total stations at the end of the year, including service, private line and connecting stations, was 1,617,025. The local calls averaged 6,586,000 per day. The number of toll calls handled during the year was upwards of 70,000,000.

During the year on customers' orders, 313,100 telephone stations were installed, 216,271 stations were disconnected, and 136,190 stations were moved from one location to another.

There were added to the local plant 422,020 miles of wire and to the toll plant 80,203 miles of wire. Of this additional wire, 23,979 miles was open wire and 478,244 miles was in cable. The company's underground system at the end of the year comprised 1,732 miles of subway, containing 7,738 miles of duct, an increase for the year of 95 miles of subway and 425 miles of duct.

Important toll cable projects were completed, and at the end of the year the company had 283,520 miles of toll circuit. More than 50 per cent of the toll wire is now in cable.

At the end of the year the employes numbered 10,079 men and 16,854 women, a total of 26,933.

New buildings were constructed at San Carlos, Crockett, Redding, Anaheim, Inglewood, California; at Medford, Ore.; at Seattle and Hoquiam, Wash., and at Lewiston, Ida. The central office equipment was increased by the completion of nine new offices, six replacing existing offices and by substantial additions to 68 other central office equipments.

During the year the number of central offices employing machine switching equipments was increased by four, and there was an increase of 63,711 stations served from machine switching central offices. At the end of the year there were 39 central offices so equipped, serving 301,995 telephone stations.

The cost of plant added during the year was $37,720,820.30, the cost of plant displaced was $13,578,665.31, transferred from non-operating property and general equipment $77,731.55, making a net addition to the plant account of $24,219,886.54.

Directors of A. T. & T. Re-elected at Annual Meeting.

A total of 7,167,746 shares out of the 10,643,278 outstanding shares of the American Telephone & Telegraph Co. were voted unanimously for the re-election of directors at the annual meeting of the company on March 29. This was considered a large representation, as the shares of the A. T. & T. are more widely scattered than the stock of any other American company.

Stock of the company, classed as one of the leading investment securities, is selling at its highest level in more than 20 years.

Diamond State Company Report Shows Good Increase.

The Diamond State Telephone Co., the Bell company operating in Delaware, reports for the year ended December 31, 1926, operating revenues of $1,457,240 comparing with $1,346,591 in 1925. The net income after depreciation, taxes, interest, etc., was $360,151, against $294,774 in the previous year.

Telephone News Items from Europe

Progress Being Made in Intra-Continental Telephony in Europe—Business Men Greatly Interested—Statistics Regarding Telephones in Great Britain and Ireland—Miscellaneous Items of General Interest from London and Paris

By "Telephony's" Special Correspondent

The recent March meeting in Paris of the international committee on telephony —a standing committee of the International Chamber of Commerce—revealed two interesting points.

Intra-Continental Telephony in Europe.

First, that business interests in Europe are recognizing the importance of efficient long distance telephone service in the successful conduct of modern international business; and secondly, that, though a great deal yet remains to be done, progress has been made during the last two or three years in improving communications.

It is clear that the C. C. I. (Comité Consultatif International des Communications Telephoniques á grande distance), established in 1924 on the initiative of the French government, and composed of technical representatives of the official telephone administrations in Europe, has lost no time in getting to work.

The report of this committee submitted for the information of the international telephone committee, shows a remarkable growth in the number of circuits available, and an equally striking decrease in the average mean delay in establishing telephone communication between the most important commercial centers in Europe.

In 1925 the intra-continental network in Europe was practically in the same stage of development as in 1914 prior to the war. The laying of arterial telephone cables in Central and Western Europe has since then proceeded apace and already the majority of the circuits furnished by these cables is in service, most of the remainder being due to come into service under the development programs of 1927.

In fact, if the forecast of the C. C. I. is justified, there will be by the end of 1927, a telephone service connecting the principal points of Europe which will be at least respectable.

Here are some definite details of quite recent developments:

German underground system connected with Dutch, Swiss, Austrian and French underground systems. Connection with Belgium and Czechoslavakia planned very shortly. New Germany-Denmark submarine cable laid; Germany-Sweden cable due in 1927.

Germany-Holland—9 new circuits established.

Germany-England—12 direct circuits available.

Germany-Switzerland—13 new circuits established.

Germany-Belgium—14 new circuits shortly available.

Prague-Berlin, Prague-Budapest, Prague-Vienna—Direct underground cable communications in construction.

Prague-Paris—Circuit completed.

Amsterdam-Stockholm—Good communication available.

Paris-Rotterdam, Paris-Turin, Paris-Milan-Venice—Overhead circuits in service.

Paris-Madrid, Paris-Barcelona—Circuits coming into service very shortly.

Paris-Belgium—15 overhead circuits.

Paris-Netherlands—Two circuits.

Paris-England—18 circuits. When all the contemplated submarine cables have been laid, the Paris-Boulogne-London cable will carry 100 simultaneous communications between Paris and London.

Paris - Stockholm, Paris - Copenhagen—Via Berlin, available shortly.

Paris-Budapest—Via Frankfort and Vienna, also available shortly.

Transatlantic Communications.

The meeting had looked forward with much interest to an item on the agenda which seemed to hold out promise of some information on the subject of transatlantic telephony and the possibility of the extension to other countries of the system of wireless telephony.

The committee, however, had to be content with a non-committal report from both the American and British administrations in the sense that the service is still experimental and that any attempt to draw useful deductions from the statistical data at present available would be useless and might even be misleading. In all the circumstances, this certainly seems the right view.

Reviewing the whole proceedings, one derived the welcome impression that business men in Europe are now taking a genuine interest in the development of long-distance telephone communication altogether apart from the technical point of view.

They want a good, rapid and efficient service, and they are going to exercise pressure upon all the administrations concerned until they get it. They recognize that at last a good start has been made and now they want to see the work accelerated, unhampered by budget and parliamentary considerations. In this direction, as a mouthpiece of strictly commercial interests, the International Chamber of Commerce can do—and is doing useful work.

British Telephones in 1926.

Postoffice statistics just issued show that during 1926 there were installed in Great Britain and Northern Ireland 119,092 telephones, bringing the total number in use up to 1,477,000. Of the new installations 41,596 were made in private residences, bringing this total to 291,700. The share of provincial exchanges in this number is 181,530.

There were 21,493 call boxes in use at the end of the year. Street kiosks with telephones numbered 2,716. Of the total number of call boxes, the provinces have 16,807 and London 4,686.

The total number of calls for 1926 was 1,072 millions, an increase of 73,000,000 over the total for 1925.

The number of new rural telephone exchanges opened was 196, bringing the total to 991. Party-line stations in rural areas numbered 9,958, the year's increase of 204 tending to show that this inexpensive method of installation is gradually becoming popular.

Rural railway stations on the telephone numbered 721, of which 47 were added during the year.

New Anglo-French Cable.

During March, 1927, a new submarine telephone cable—the largest up to the present—was laid between Auxdresselles, near Boulogne, and Sandgate, near Folkestone.

It consists of 21 circuits, four of which will connect Switzerland with England. It is 23½ nautical miles in length, about 2.6 inches in over all diameter and weighs 623 tons. It was laid all in one length, thus avoiding the necessity of making a joint at sea.

The cable is of the paper-insulated, lead-covered type and has the advantage of low electrostatic capacity and low leakance.

Dublin's First Automatic Exchange.

The new automatic telephone exchange in Ship street, Dublin, is now practically completed. The cut-over from the present system will, it is expected, take place about the end of April, although there are about 1,200 lines in the area and much of the work of installing the new receivers remains to be done.

A similar exchange, providing for 1,800 lines, will be equipped immediately for the Merrion Square, Dublin, area. The machinery is being manufactured.

Postmaster-General Threatens Himself.

A good telephone story was told by Sir William Mitchell Thompson, the postmaster-general, against himself, at the annual dinner of the Croydon (Surrey) Constitutional Club.

His first official communication from the postoffice, after his appointment as its chief, was a note saying that the postmas-

(*Continued on page 29*)

THE SCOTTISH

THE Scottish are both pioneers and empire builders. It was once jocularly observed that when the North Pole was discovered a Scotsman would be found sitting on it, and, had there actually been any pole to discover, that might well have proved true.

The fact remains that determination, steady will to prosper, unfailing attachment to the business in hand, enterprise, and thrift, are characteristics which have given Scotsmen their position and reputation throughout the world.

Their attachment to "Strowger" both in public and private life is indicative of their appreciation that time is money and the presence of the Dial in both counting house and castle lends colour to the statement that the typical Scotsman becomes an explorer only when there is something with commercial possibilities in it to explore.

Upwards of 3,500,000 Strowger Automatic Telephones installed or under construction throughout the world

"ATM" Strowger

AUTOMATIC TELEPHONE MANUFACTURING COMPANY, LTD.
STROWGER WORKS :: :: :: :: MILTON ROAD, EDGE LANE, LIVERPOOL

Associated Company
INTERNATIONAL AUTOMATIC TELEPHONE CO., LTD., LONDON

STROWGER

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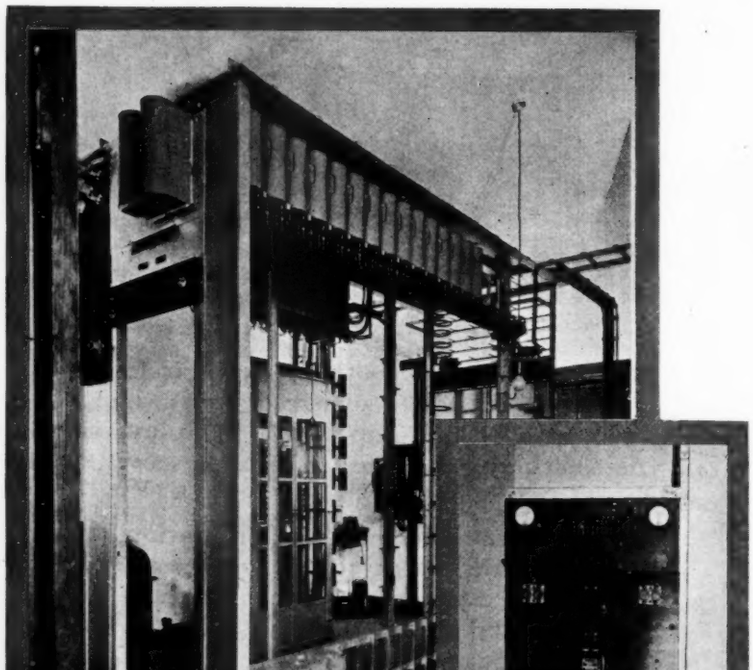

A Typical C-A-X Installation
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TELEPHONE

When writing to Automatic Electric Inc., please mention TELEPHONY.

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Aut tric Inc.

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One of the following types of C-A-X's will solve your small exchange problem:

Type 15: A connector-per-line system, with a maximum capacity of 12 lines (including trunks) per unit. Can be either common battery or local battery. Dial control code ring is used.

Type 16: A common battery line-switch-connector system, with a capacity of 75 lines and 4 inter-office trunks. Automatic code ringing up to ten stations per line.

Type 17: A common battery line-switch-selector-connector system, with a capacity of 200 lines per unit. Automatic code ringing up to ten stations per line.

Type 18: A line-switch-connector system using existing magneto telephones equipped with dials, and having a capacity of 75 lines per unit. Automatic code ringing up to ten stations per line.

Type 19: A line-switch-selector-connector system, with a capacity of 200 lines per unit. Magneto telephones equipped with dials are used. Automatic code ringing up to ten stations per line.

More Than 3,500,000 Strowger Automatic Telephones in Service or on Order Throughout the World

E EQUIPMENT

When writing to Automatic Electric Inc., please mention TELEPHONY

The Uses of the L. I. D. F. in the Strowger Automatic Telephone System

by EDWIN O. WALKER
Associate Director of Technical Publications, Automatic Electric Inc.

The Line Intermediate Distributing Frame (L. I. D. F.), when employed in a Strowger Automatic telephone office, is usually interposed between the lineswitches, connector bank terminals, and main distributing frame as shown in the accompanying figure.

This arrangement of the L. I. D. F. in combination with the M. D. F. permits cross-connecting between the outside cable pairs, the lineswitches and the connector bank terminals. The flexibility of cross-connecting thus acquired has advantages which are manifold and far reaching, many of them being of intangible value.

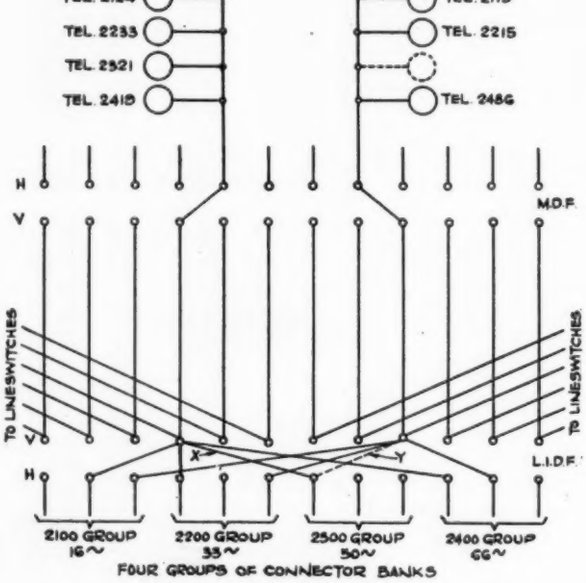
In small offices where the class of service is mostly individual line and changes due to subscribers moving are comparatively few and directory periods short, it is often found that the advantages of the L. I. D. F. are offset by the additional expense necessitated by the installation of this equipment.

Whether or not an L. I. D. F. should be provided for a Strowger Automatic central office is dependent upon local conditions, and the operating company's preference.

Space will not allow a thorough discussion of all the advantages which can be expected from the use of an L. I. D. F. and hence only a few of the points which are tangible and of paramount importance will be outlined. These may be summarized as follows:

A—Increase in efficiency of the outside plant.
B—Provision for changes in classes of service.
C—Facilities for re-distribution of traffic.
D—Reduction in the amount of line switch equipment required.

A—In an automatic telephone system where party line service is rendered and no L. I. D. F. has been installed it will generally be noted from a perusal of the cable plant records that a large percentage of the party lines are not fully loaded. Two party lines will be found with only one telephone connected to a line and four-party lines with only two or three telephones connected



to a line. The vacated numbers have been placed on intercepting trunks because the subscribers have moved or changed their class of service. In some districts service has probably been denied potential subscribers because no cable pairs for straight line service, or party line numbers were available; yet the records show that the cable plant in these districts has been working at a very low efficiency.

Had an L. I. D. F. been used it would have been possible to free some of the cable pairs from party lines on which only one, two or three telephones were in operation, by connecting these telephones to other partially loaded party lines, because the L. I. D. F. obviates the necessity of changing the telephone number and placing it on intercepting service.

The sketch illustrates how this can be accomplished. Assume subscriber No. 2321 moves to another neighborhood in the same office area. The change can be made by removing jumper "X" at the L. I. D. F. and running a new jumper as shown by dotted line "Y." Tel. No. 2321 can then be connected to the new cable pair in the position shown by the dotted circle. The position on the cable pair previously occupied by telephone No. 2321 can immediately be put to use if necessary.

B—Any pronounced advance in rates is usually accompanied by numerous changes in the classes of service desired by the subscribers; individual line subscribers will often request two or four party line service while two party line subscribers will request four party line service, etc. Changes of this nature, taking place simultaneously, have a serious effect on telephone service, because such conversions cannot be readily made without a change in the subscriber's telephone number, if an L. I. D. F. has not been provided. It also may be found that sufficient party line equipment is not available, and it will be necessary to modify the relieved individual line boards for two or four party operation. In some cases additional equipment will be required which cannot be secured immediately. Meanwhile service is disrupted and revenue lost. In such cases had an L. I. D. F. been employed, the only changes necessary would be the rerunning of jumper wires.

C—Even though great precautions are taken in assigning lines to the various line switch sub-groups, it may happen that some of these sub-groups will become overloaded whereas other sub-groups will be under-loaded. When an L. I. D. F. is employed, some lines can be disconnected from each of the line switch sub-groups which are over-loaded and be connected to line switch sub-groups which are under-loaded. In this manner an equal distribution of the originating traffic can be maintained.

D—In a Strowger Automatic system the number of spare lineswitches provided for the initial installation for each class of service is usually 2 to 5 per cent greater than the number of working lines required and the number of connector terminals is usually 10 per cent greater than the number of working lines required. The spare lineswitches are to facilitate balancing the traffic among the various lineswitch sub-groups and the extra connector bank terminals are to care for directory changes, etc.

When an L. I. D. F. is interposed between the lineswitches and connector banks so that any lineswitch can be cross-connected to any connector terminal, the number of spare lineswitches and connector terminals can be furnished independent of each other, i. e. it is possible to furnish from 2 to 5 per cent spare lineswitches and 10 per cent spare connector terminals.

When no L. I. D. F. is used and the lineswitches are cabled directly to connector terminals, it is not practical to separate the two, and the number of spare lineswitches and connector terminals to be furnished must be the same—usually 10 per cent.

It therefore can readily be seen that the L. I. D. F. will reduce the amount of lineswitch equipment in some cases as much as 8% of the total number of lines installed. This saving is also reflected in the exchange selectors.

Most of the points outlined are of extreme importance to the traffic department of the operating company since it permits the correction of traffic irregularities, and reduces the number of directory changes, thus decreasing the number of information calls and a great deal of clerical work incident to keeping the directory up-to-date.

This is No. 16 of a series of articles prepared by members of the Engineering Staff of Automatic Electric, Inc., covering technical features of the Strowger Automatic Telephone System.

(*Concluded from page 24*)

ter-general regretted that unless he paid his telephone account within three days his telephone would be disconnected. "Fortunately," he said, "I succeeded in paying my account in time."

Speaking of the increasing size of the new London telephone directory, a post-office official said it was quite certain that within three or four years some drastic alterations would have to be made. Probably the directory would be published in two volumes.

"The April issue, which we are now distributing," he said, "shows an increase of 18,000 subscribers over the October issue and a total of 283,000 names. As the directory now contains 70 more pages than the previous issue, it is obvious that at this rate, some change of form will be imperative.

"Four columns of names on a page instead of three, as as present, would afford only a temporary relief and our problem would soon arise again."

Punishing Impatient Callers.

Impatient users of the telephone are to receive prompt punishment in Paris. Calls are to be numbered as they arrive at the exchanges and will then be dealt with in order.

If a subscriber grows impatient and agitates the hook, thereby distracting the attention of the operator, he will lose his turn and his name will be placed at the bottom of the list.

The Prince's Rural Telephone.

The Prince of Wales, who took over his new farm in Nottinghamshire on March quarter-day, is setting a good example to British farmers by having a telephone installed.

British Museum's Telephoned Song.

The manuscript copy of the first song ever sent between New York and London by telephone has been placed in the British Museum.

It is "The Shepherd of the Hills," by Horatio Nicholls, who telephoned it across the Atlantic. It was orchestrated and played in London the same evening.

Telephone Developments in Mexico

Extensive Program of Development in Mexico Laid Out by Mexican Telephone & Telegraph Co. Under the Direction of International Telephone & Telegraph Corp.—Line to Laredo, Texas, to Connect With Lines in U. S.

By Harry C. Dodge,
Vice-President, Paul C. Dodge & Co., Inc.

American investments in Mexico amount to the immense sum of $1,400,000,000 as revealed by a recent survey. Our investments in oil properties including refineries, pipe lines and terminals amount to about $350,000,000, while the investment in mines, smelters and railways that serve them aggregates approximately $400,000,000.

We have an investment in city properties of $31,500,000 and in rural properties of $142,000,000. Rural holdings of our nation include ranches and stock sustained thereon, and cotton and sugar plantations.

Our total investments aggregate about $1,400,000,000 distributed among a variety of interests in addition to those mentioned. Other interests comprise holdings in manufacturing plants, merchandising concerns, public utilities, banks, the railway debt, and timber, which constitute the major portion of the minor investments.

Consideration of the foregoing statement showing the magnitude of our investments in Mexico, leads to the conclusion that efficient telephonic communication between the people of the United States and Mexico is very essential.

At the beginning of 1926 there were but about 50,000 telephones in use in Mexico with a population of 15,000,000, and over one-half of these were operated in the City of Mexico and its environs, constituting the federal district.

At that time there were 50 operating companies in Mexico, owned principally by local business men. Capital was not available for development and no long distance lines had been built.

The city of Tampico, with a population of 100,000, one of the world's greatest oil shipping ports, requires for the proper transaction of its local business as many as 8,000 to 10,000 telephones while the system comprised about 200 stations. Other important industrial centers were inadequately served by small inefficient companies.

The present activities of the International Telephone & Telegraph Corp. in Mexico represent constructive accomplishment of much importance to the United States as well as Mexico. The work is being carried on under peaceful conditions and with the assistance and cooperation of the Mexican government. President Calles endorses the undertaking.

This company, financed by American capital, was granted rights by the Mexican government in 1925 to construct and operate throughout the republic local telephone exchanges and long distance lines. The Mexican government is a partner in the enterprise, receiving a percentage of the gross earnings.

The company is operating in Mexico under the name of its subsidiary, the Mexican Telephone & Telegraph Co., whose name and properties it has acquired. Its construction program, in brief, is as follows:

Out of date equipment throughout the country is being rebuilt or replaced. In Mexico City, a new automatically operated exchange is in process of construction. At Tampico, the same type of exchange, of 20,000 lines capacity, is being installed. The company announces its intention to complete in the near future modern exchanges in 15 of the most important cities of the country.

Engineering plans provide for construction and equipment of long distance lines in a manner assuring satisfactory communication to distant points. These lines will provide circuits for connections between the company's various exchanges.

Before the end of this year, the long distance circuits of the Mexican Telephone & Telegraph Co. will connect Mexico City, population 65,000; Queretaro, population 30,000; San Louis Potosi, population 57,000; Tampico, present population estimated at 100,000; Ciudad Victoria, population 17,000; Saltello, population 47,000; Monterry, population 90,000; and Nueva Laredo, population 15,000. All of these communities are served by the National Railroads of Mexico.

Connections will be made with Laredo, Texas, and then international connections will be made. At present, circuits connecting Mexico City and Quereto, 154 miles distance, are in operation. These lines are to be extended to Nueva Laredo situated on the west side of the Rio Grande and connection established with Laredo, on the opposite side of the river.

In 1925, the International Telephone & Telegraph Corp. acquired a controlling interest in the Mexican Telephone & Telegraph Co., which was incorporated in February, 1905, in Maine, to construct and operate telephone, telegraph and electrical plants, lines and systems in Mexico.

Under the new management, negotiations were concluded for the return to the company of its property which had been in the hands of the Mexican government since 1914.

An amended concession was secured covering the right to construct and operate a telephone system in the federal district—Mexico City and its environs—as well as valuable concessions, covering the right to construct and operate a long distance system throughout the republic.

Automatic Telephones at Gloucester

English City, Dating Back to Time of Romans in England, and Now Center of Many Modern Industries, Has Automatic Telephone Service—Some of Features of New Equipment Placed in Service in February by the Post Office

By J. W. Catchpole

Gloucester is the latest city to undergo transition from manual to automatic operation of its telephone system under the general scheme of conversion now being carried out throughout Great Britain by the British Post Office.

In Roman times, Gloucester was the municipality or colonia of Glevum, founded by Nerva (A. D. 96-98). Parts of the original walls can be traced, and many Roman remains, coins, etc., have been unearthed in the course of excavations.

Gloucester Cathedral marks the foundation of an abbey of St. Peter in 681, and a musical festival, known as the Festival of the Three Choirs, is held there every third year.

Prior to the Conquest, Gloucester was a borough, governed by a portreeve, and boasted a castle which was frequently a royal residence. Henry II granted Gloucester its first charter in 1155, and its privileges were greatly extended by the subsequent charter of King John in 1200.

At the school of St. Mary de Crypt, founded by Dame Joan Cooke, in the reign of Henry VIII, the famous preacher, George Whitefield, founder of the Calvinistic Methodists, was educated. Robert Raikes, originator of the Sunday School movement was another Gloucester worthy, and opened his first Sunday School there in 1780.

Some quaint gabled and timbered houses still preserve the ancient aspect of the city, a noteworthy example being the New Inn, Northgate Street, a beautiful timbered house with external galleries and courtyards, built in 1450 for the accommodation of pilgrims to Edward II's shrine by Abbott Sedbroke.

Situated on the east bank of the Severn, Gloucester possesses over 12 acres of docks, connected by the Gloucester & Berkeley canal with those at Sharpness, on the estuary of the Severn. Thanks to this facility, Gloucester carries on an important foreign trade, especially with the Baltic ports. It is also the center of many modern industries.

In this connection it is interesting to record that the iron trade of Gloucester dates from before the Conquest. Tanning was carried on there prior to the reign of Richard III; pin-making and bell-founding were introduced in the 16th century, while the long-existing coal trade of Gloucester grew to importance during the 18th century. The cloth trade flourished in Gloucester from the 12th to the 16th century, and a seaborne trade in corn and wine existed before Richard I came to the throne.

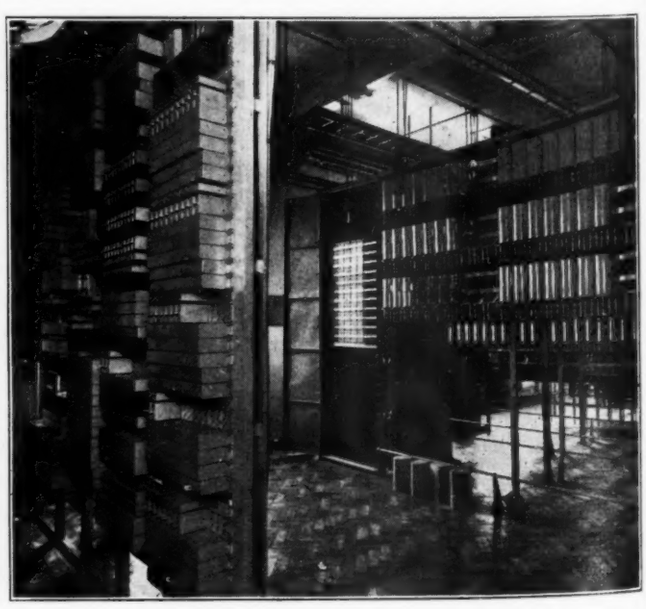
It will be seen that, industrially considered, Gloucester has passed through many vicissitudes to a present-day prosperity which merits the most modern and efficient system of communication. The new automatic telephone exchange, together with the associated manual switchboard equipment, still necessary to preserve intercommunication with areas outside the city, is located in Bull Lane.

It has been manufactured and installed to the specification of the engineer-in-chief's department of the British Post Office by the Automatic Telephone Mfg. Co., Ltd., Strowger works, Liverpool, the present capacity of the automatic equipment being 1,500 lines with provision for ultimate expansion to 2,700 lines.

The system at Gloucester is four-digit, and the first selectors are equipped with a digit-absorbing feature and fitted with 600 point banks. The object is to enable the first selectors to function as second selectors when subscribers whose numbers lie in the 2,000 group, are required.

When the first digit, "2," is dialed, the shaft ascends, carrying the wipers to the second level; but before it can cut in to this level, the mechanism is automatically released, and a relay operates to prepare the bottom line-bank wipers for the next digit.

The digit-absorbing feature is now cut out for the remainder of the call and the selector functions normally. For example,

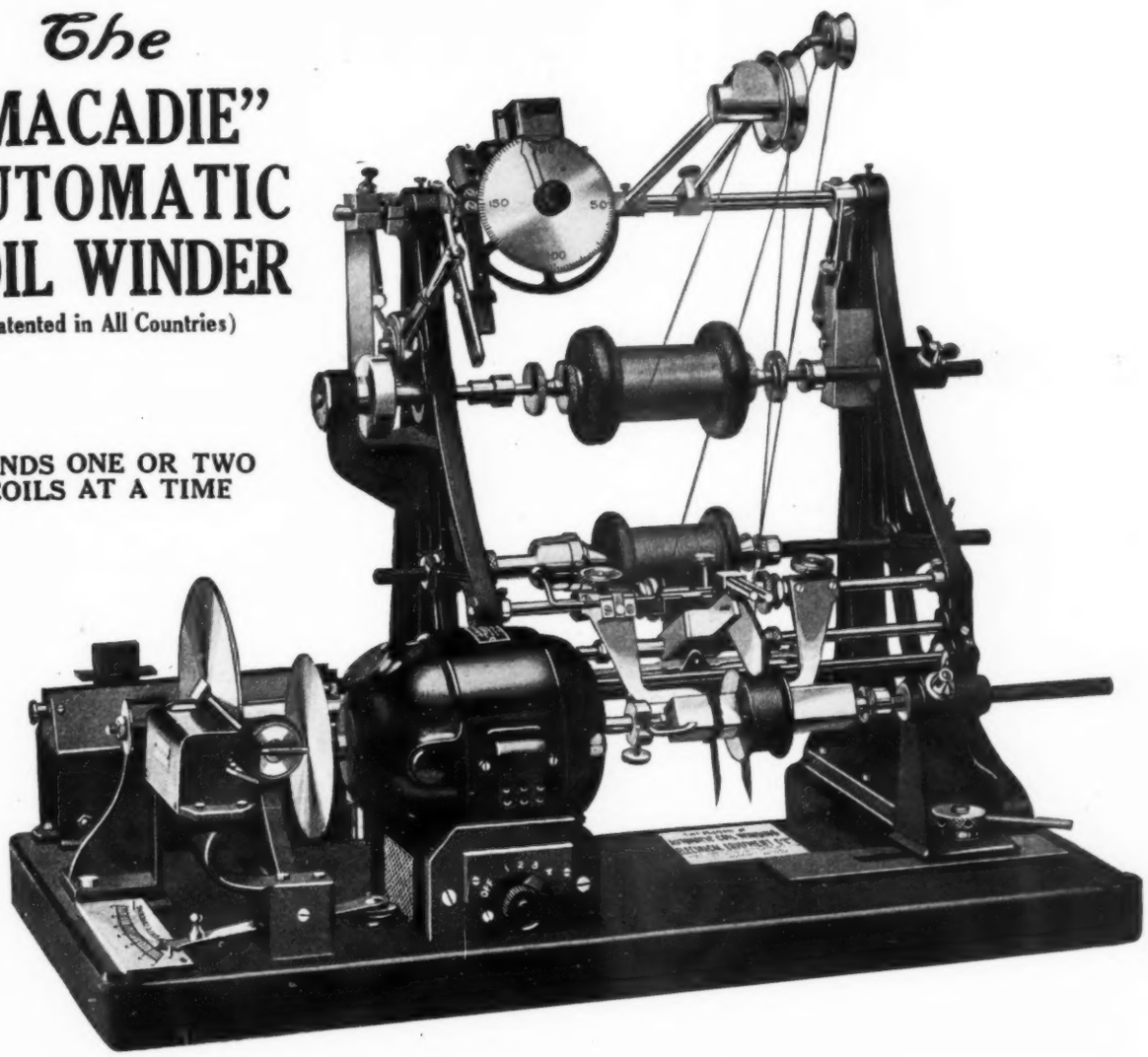


A. T. M. (Strowger) Automatic Telephone Exchange at Gloucester, England, with Line-Switch Unit in Foreground—Special Apparatus Rack and Selector Trunk Board.

The "MACADIE" AUTOMATIC COIL WINDER

(Patented in All Countries)

WINDS ONE OR TWO COILS AT A TIME



The "Macadie" Winder

has been described by one of the largest Electrical concerns, as

"THE FINEST COIL WINDING PROPOSITION THAT HAS EVER BEEN PUT ON THE MARKET."

This testimonial was given two years ago, since when we have greatly improved the general construction of the machine, and made additions, many of which our customers have suggested.

Keep pace with the march of Progress

TO reduce to a minimum the human element is the aim of all manufacturers. The winding of coils has, in the past, called for knowledge and skill on the part of the operator.

Investigate the merits of the "Macadie" machine, you can do this easily and quickly—our new booklet tells the whole story.

Coils ranging in size from ⅛" to 5" can be wound at any desired speed and tension up to 6,000 revs. a minute. The shape of the coil does not matter—it can be round, flat, rectangular or irregular.

The "Macadie" Winder

has been installed in the principal Electrical Works throughout the world.

FOR TELEPHONE FACTORIES, ITS INTRODUCTION INCREASES OUTPUT, REDUCES COSTS, AND STILL MORE IMPORTANT, PRODUCES PERFECTLY WOUND COILS.

We advertise these facts but give proof.

A sample machine has resulted in an order for NINETY, in another case, FIFTY-FIVE.

The Automatic Coil Winder & Electrical Equipment Co., Ltd.

Wellington House, Buckingham Gate, London, S. W. 1., England

WE ARE DESIROUS OF ENTERING INTO AN ARRANGEMENT FOR THE SOLE SELLING OR MANUFACTURING RIGHTS OF THE "MACADIE" WINDER FOR THE U. S., AND INVITE CORRESPONDENCE FROM ANY FIRMS OR INDIVIDUALS OF FIRST-CLASS STANDING

When Writing to Automatic Coil Winder & Elec. Equip. Co., Ltd., Please Mention TELEPHONY

should the second digit be "2," the shaft again ascends with wipers to the second level, cuts in, selects an idle trunk, and extends the connection via the bottom bank to a final selector on the "2,200" unit.

There are 11 selector trunk boards mounting the group selectors; final selectors being disposed as usual on three shelves at the back of the rotary line-switch units.

Special numbers have been allocated as follows:

0 Trunk and junction calls.
90 Phonograms.
91 Inquiries.
92 Service.
93 Rural party lines.
96 Coin-box inquiries.
99 Test desk.

To call subscribers outside the area, "0" is dialed, and establishes connection with a trunk and junction operator at the manual board, whence the call is extended in the usual way. Similarly, calls incoming from manual subscribers outside the Gloucester automatic area are extended by the manual operators who are furnished with dials for this purpose.

The equipment of the automatic exchange includes a three-bay repeater rack, M. D. F., I. D. F., and a five-bay meter rack. Special traffic meters have also been installed, enabling the closest study to be made of local telephone traffic and statistics compiled for future guidance.

The Gloucester manual exchange equipment comprises a switchboard suite consisting of one cable-turning section, 19 two-panel sections, and eight angle sections to accommodate it to the switchroom layout. Operators' positions Nos. 1-6 were already existing, and the remaining sections have been added to bring the capacity up to present requirements.

The equipment further includes an I. D. F., special apparatus rack, fuse board, fuse alarm mounting board, and test jack frame.

A three-panel power board controls direct and ringing current supply to both automatic and manual switchboards. The first panel mounts the supervisory equipment; the second carries the starters and switches for controlling the ringing machines, amateur, voltmeter, and battery charge and discharge switches, etc., while the third is given over to the manual equipment.

The main batteries of Chloride Electric Storage Co.'s manufacture, comprise two sets of its S. B. W. 8 type elements in S. B. W. 14 lead-lined boxes. They are mounted on single tier racks, and have a capacity of 756 ampere-hours.

The charging motor-generator has an output of 95 amperes at 57 volts and comprises an enclosed ventilated shunt-wound motor, operating on 440 volts D. C., direct coupled to a shunt-wound dynamo with regulation between 50 and 68 volts.

The ringing dynamotors are in duplicate, one designed to run off the supply mains; the other off the exchange battery in series with an impedance coil. To provide automatic change-over facilities in the event of failure of the supply, an additional ringer panel carries the necessary equipment and insures maintenance of ringing current by switching over to the battery-driven machine and actuating an alarm which calls attention to the fault.

Supervision throughout is of the usual high order incidental to automatic telephone exchanges, every possible contingency being provided against and automatic alarm signals arranged to notify abnormal conditions.

A one-position test desk and a one-position supervisor's desk complete the Gloucester installation. The Post Office is to be congratulated upon this latest successful addition to its rapidly growing list of provincial A. T. M. (Strowger) equipped exchanges now in active operation.

The Gloucester automatic exchange was cut into public service at 2:00 p. m., on Saturday, Feb. 12, when the mayor, Dr. D. R. Finlay, put through the first call. The transfer from the old to the new system was carried out with great success. When everything was in readiness the Post Office divisional superintendent engineer, H. Wilson, gave the signal, and within one minute all of the subscribers had been connected with the new automatic equipment.

The population of Gloucester at the 1921 census was 51,330, so that the latest development of the telephone system in this district shows approximately one telephone to every 34 inhabitants. With the inception of automatics, there is every reason to anticipate that here, as elsewhere, this factor will speedily improve when the advantages of the new service are realized.

Manual Switchboard in Gloucester, England, Exchange Consisting of Nineteen Two-Panel Sections and Eight Angle Sections to Accommodate It to the Operating Room Layout.

Lower Your Line Construction Cost with WEJ-LOCK Guy Wire Anchors

WHY bury a DEAD MAN, when a Wej-Lock Anchor No. 40 will carry a TEN TON load?

WHY spend Ten DOLLARS to hold a corner when it can be done better for less than FIVE DOLLARS?

Why bury a log that will decay in a few years, when you can install a malleable iron WEJ-LOCK ANCHOR that will last for ages?

WHY take our word for it when we are willing to let you prove our claims on your own ground?

WEJ-LOCK ANCHORS are not an experiment; they have been used exclusively by several large companies for a number of years.

Wej-Lock Anchors are made of malleable iron; install in a small hole; have a greater spread than any anchor; positive in action; no guess work, you know when they are spread; no extra tools required. The lower block is threaded, turn rod to right to spread.

Wej-Lock Anchors are equipped with standard rods, drop forged eye, with malleable iron, galvanized roller. The roller in the eye makes it possible to get the required tension with much less power; does away with the thimble.

Will sell you one or one thousand and on a positive guarantee. Let us figure on your next requisition for anchors.

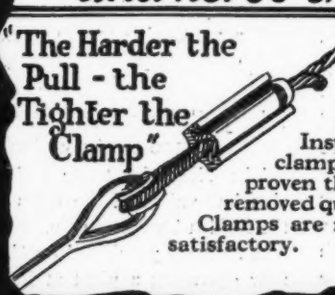
Wej-Lock Anchor Closed for Installation

Wej-Lock No. 40 carries 16,000 lbs. with safety, has held 24,000 lbs.

Wej-Lock No. 20 carries 10,000 lbs. with safety, has held 14,000 lbs.

No. 10 carries 6,000 lbs., has held 9,000 lbs.

~and here's the WEJ-LOCK boltless clamp~



"The Harder the Pull - the Tighter the Clamp"

Many attempts have been made to make a "BOLTLESS CLAMP" that would be satisfactory.

You have seen many of them, but not the WEJ-LOCK or anything like it.

Installed in a few seconds. The harder the strain the tighter the clamp is drawn. Does not damage the strand. Repeated tests have proven the strand will break outside the clamp without a slip. Can be removed quickly if necessary. Can be used repeatedly Wej-Lock Boltless Clamps are made in ¼, ⅜, 7/16 and ½ inch. Sold on positive guarantee to be satisfactory.

Please state whether you prefer to buy direct or through Jobber.

Manufactured By

WEJ-LOCK MANUFACTURING CO.

Winterset, Iowa

New York City Discovers Dependancy Upon Electricity.

While repair forces of the New York Telephone Co. were toiling at high pressure in an effort to restore service on the nearly 6,000 telephone lines that were put out of commission by a fire Sunday, April 17, in the new Eighth avenue subway at 36th street, fire broke out again at 35th and 37th streets the following day, causing still further damage to telephone cables and delay in the restoration work.

Twelve more cables connecting uptown and downtown central offices were put out of commission by the latest fire. Service over the entire Knickerbocker tandem board, which is the chief connecting link between machine switching central offices in northern Manhattan and New Jersey towns, was paralyzed, as a result.

Not only were telephones silent over a wide area, but electricity in its numerous other forms was cut off entirely from one of the busiest sections of the great city.

Elevators which had carried thousands to lofty offices in city skyscrapers ceased to function. Isolated on the upper floors of office buildings, 25 and 30 stories above the street, office workers lowered cans and baskets and drew their lunches up to them.

Many persons left their offices and hurried home when the failure of a number of telephone exchanges cut them off from communication.

The paralysis extended over what is ordinarily one of the busiest sections of New York, the "thirties" and "forties" of the west side. Many business firms deserted the affected district and set up temporary offices elsewhere.

At Eighth avenue and 36th street, where the first fire occurred, the wires connecting five central offices crossed. This is a particularly unfortunate spot for such a catastrophe to occur, and the damage was proportionately great. At this point, ten trunk cables carrying 3,767 trunks linking together various central offices were put out of service by the fire, as were 21 cables carrying lines from individual telephone subscribers to the central offices from which they were served. Calls over 1,400 of the trunks were rerouted. These were returned to service as rapidly as tests proved them satisfactory.

It was expected that service on about 50 per cent of these trunk cables would have been restored by noon Monday, but the occurrence of the second fire still further delayed the completion of this work. The Chickering central office was hardest hit by the fire with 2,304 subscribers' lines out of service. Lackawanna came next with 1,446, Longacre 1,443, while Pennsylvania with 704 lines out of service was the least affected.

In order to restore service on these lines, the New York Telephone Co.'s repair forces were obliged to remove the damaged sections of cable entirely and to replace them with new lengths.

What the Commissions Are Doing

Up-to-the-Minute News Regarding the Activities of State and Interstate Commissions, Courts and City Councils in Matters Concerning Telephone Companies—Summary of Commission Orders and Schedule of Telephone Hearings

Northwestern Bell Will Increase Rates at Hibbing, Minn.

The Minnesota Railroad & Warehouse Commission on April 12 authorized the Northwestern Bell Telephone Co. to increase its schedule of rates for service at Hibbing. The old monthly rates with the new rates effective on May 1 are:

	Old.	New.
Individual line, business.....	$4.25	$5.25
Two-party line, business.....	3.75	4.25
Individual line, residence....	2.50	3.00
Two-party line, residence....	2.25	2.50
Four-party line, residence....	2.00	2.25
Rural multi-party, business..	3.50	3.75
Rural multi-party, residence..	2.00	2.25
Rural switching, yearly.....	6.00	7.00

A discount of 25 cents per month is allowed from the new rates if bill is paid including any balance due on or before the 15th day of the month in which the service is rendered, except that a discount of $1 is allowed on the rural switching rate if paid within the first month of the twelve months for which bill is rendered.

The Northwestern Bell Telephone Co. operates a common battery exchange in the village of Hibbing and as of December 31, 1925, served approximately 3,415 town telephones, 127 rural telephones, and furnished service to 37 rural telephones on a switching basis.

The company submitted an appraisal of its Hibbing exchange property in which the reconstruction cost new value, exclusive of intangibles, as of September 1, 1925, was $432,324.28, and the depreciated value, exclusive of intangibles, $384,768.61. Using this last figure as a base, including $11,026.16 for working capital, $46,258.70, for organization and going concern, and $15,539.00 of net additions not included in the appraisal, the company's claimed value as of December 31, 1925, is $457,592.47.

The Hibbing exchange property, exclusive of toll property, was carried on the books of the company as of December 31, 1925, at $437,504.54, the average for the year 1925 being $429,033.41. The average book cost for 1925 including working capital of $11,026.16 is $440,059.57.

At the close of the so-called state-wide rate case, in the apportionment of values to exchanges, the commission found a reproduction cost new value, excluding toll properties, intangibles included, for the Hibbing exchange of $395,681.23, and a depreciated value of $358,813.33 as of December 31, 1920.

The net additions to the property by the company from January 1, 1921, to December 31, 1925, amount to $85,582.00. Applying the net additions to the depreciated value of December 31, 1920, the figure becomes $446,412.58.

The annual revenues at the present rates for the year 1925 were $98,909.17, the operating expenses, including taxes, with depreciation computed at 5 per cent were $85,705.90, leaving a net income available for interest, dividends and surplus of $13,203.27, which amounts to a return of 3 per cent on the company's average book value for 1925, including working capital, of $440,059.57, a return of 2.88 per cent on the company's claimed value of $457,592.47, and a return of 2.95 per cent on the depreciated value of $446,412.58, the figure which was developed above.

The estimated annual revenues at the petitioned rates are $117,417.25, the operating expenses, including taxes, with depreciation computed at 5 per cent, $89,015.67, leaving a net income available for interest, dividends, and surplus of $28,401.58, which would yield a return of 6.45 per cent on the average book cost for 1925 plus working capital of $440,059.67, a return of 6.2 per cent on the company's value of $457,592.47, and a return of 6.36 per cent on $446,412.58.

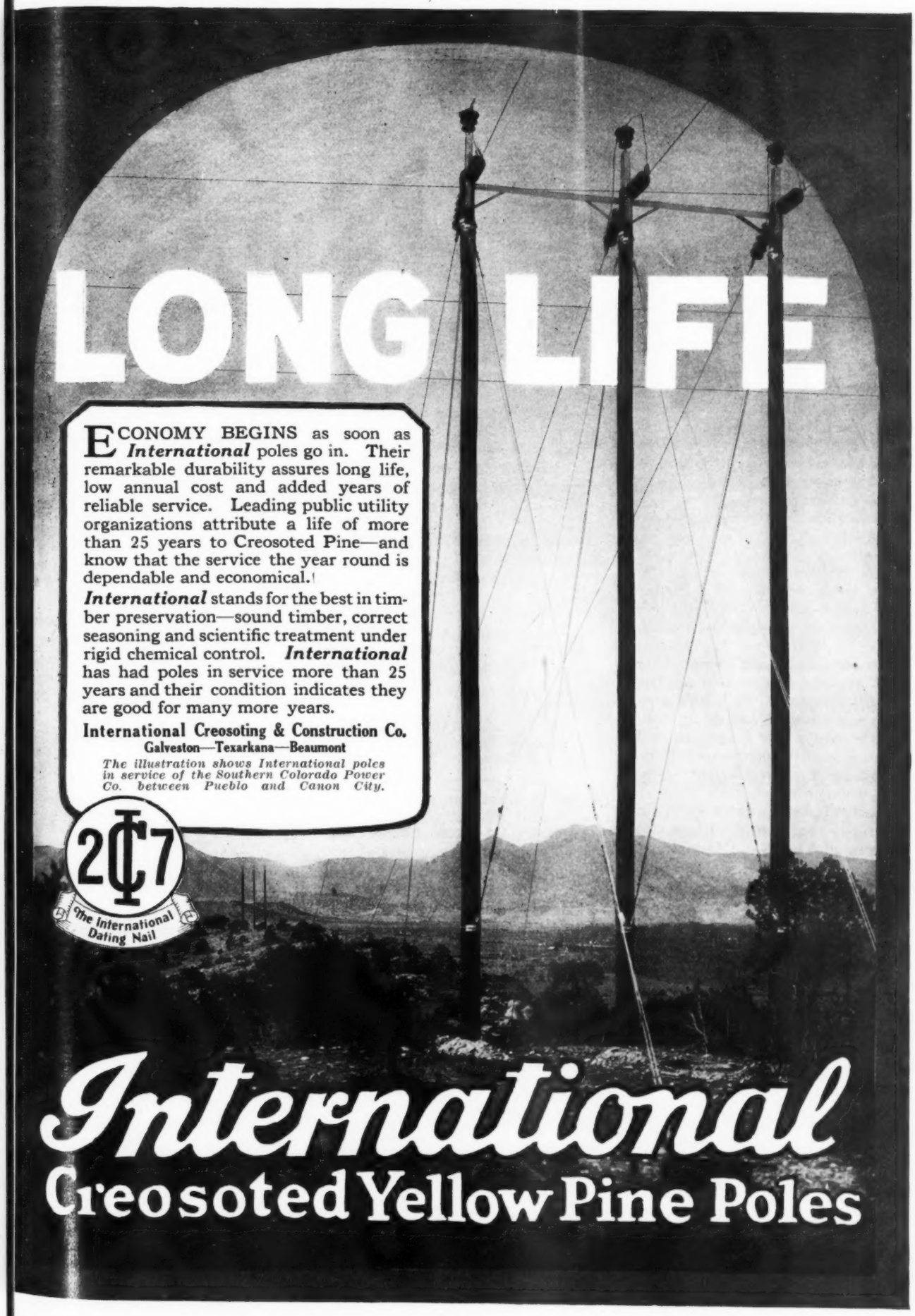
Upon review of the facts, the commission found the present rates to be unreasonable and a modified schedule of rates to be fair and reasonable, which will not yield more than sufficient revenue to provide for the necessary operating expense, depreciation, and a reasonable return upon a fair value of the property.

Many Changes in Ownership Confuse Rate Schedule.

The Nebraska State Railway Commission has validated the rates in effect with the Belden Telephone Co. The corporation was recently purchased by G. A. Salisbury, now operating a plant at Bancroft.

Within the past few years this plant has changed hands as many times, and in the exchange of ownership there has been some deviation from the authorized rate schedule filed with the commission. The only material change was in residence rates that had been increased 25 cents a month.

The exchange serves 60 town subscribers


LONG LIFE
ECONOMY BEGINS as soon as International poles go in. Their remarkable durability assures long life, low annual cost and added years of reliable service. Leading public utility organizations attribute a life of more than 25 years to Creosoted Pine—and know that the service the year round is dependable and economical.
International stands for the best in timber preservation—sound timber, correct seasoning and scientific treatment under rigid chemical control. International has had poles in service more than 25 years and their condition indicates they are good for many more years.
International Creosoting & Construction Co.
Galveston—Texarkana—Beaumont
The illustration shows International poles in service of the Southern Colorado Power Co. between Pueblo and Canon City.
2C7
The International Dating Nail
International
Creosoted Yellow Pine Poles

When writing to International Creosoting & Construction, please mention TELEPHONY.

and 128 switching patrons. Total revenues last year were $1,069.07, and expenses $1,116, leaving a deficit of $47.22, and taxes paid of $21 additional. No financial record for the period prior to the present ownership was available.

The company wanted to charge $1.25 a month for individual line subscribers switched, but the commission cut this to $1 a month. The company was authorized to charge the following net rates, with power to add 25 cents a month where not paid by the tenth.

Business individual metallic, $2; residence individual metallic, $1.50; multi-party residence, $1.25; business extension, $1; residence extension, 50 cents; switching, 30 cents; individual line switching, $1.

Nebraska Man Purchases Telephone Plant in Missouri.

The Palmyra Telephone Exchange, Palmyra, Mo., has been purchased by E. C. Hunt of Blair, Neb., from F. T. Staton. The purchase price is reported to be $25,000 and includes only the central office, city lines and equipment.

The property was taken over by the new owner April 1. Mr. Hunt, who was formerly connected with the old Home Telephone Co., of Hannibal, owns a number of telephone exchanges in Nebraska. Edmund Burk, a brother-in-law of Mr. Hunt, will have charge of the management of the exchange.

Mr. Staton assumed management of the Palmyra exchange 18 years ago last fall. About four years ago the company of which he was a member, sold the exchange and a few months later it again changed hands, being purchased by Staton & Dean. Two years ago Mr. Staton bought out the interest of his partner.

Authorized to Build Lines in Territory of Purchased Company.

The petition of the Seneca Gorham Telephone Corp., Canandaigua, for permission to construct lines in the territory now served by the Ontario County Mutual Telephone Co. in the towns of East Bloomfield, West Bloomfield, Richmond, Bristol, South Bristol and Canadice, Ontario county, was granted by the New York Public Service Commission on April 15.

The application of the Ontario County Mutual Telephone Co. for the transfer of its system to the Seneca Gorham Telephone Co. is now before the commission. The granting of this application will permit the taking over of the lines. No new construction is contemplated at this time.

New Schedule of Increases at Johnstown, Pa.

The Johnstown Telephone Co. has filed with the Pennsylvania Public Service Commission a new schedule of rates, to be effective May 1, making a universal increase over those in effect under the old tariffs. The increases touch every class of service, and range from 62½ per cent to 17 per cent over the rates in effect before the first increase on April 1.

The old rates, those effective April 1, and the ones scheduled for May 1, with the percentage of increase in each, are as follows:

	March Rate	April Rate	May Rate	Per Cent of Increase
BUSINESS.				
Individual	$4.00	$6.00	$6.50	62½
Two-Party	3.50	5.00	5.50	57
Four-Party	3.00	4.00	4.50	50
Multi-Party	3.50	4.00	4.50	29
P.B.X. Trunks	4.00	6.00	6.50	62½
RESIDENCE.				
Individual	3.00	3.50	3.50	17
Two-Party	2.50	3.00	3.00	20
Four-Party	2.00	2.00	2.50	25
Multi-Party	2.00	2.00	2.50	25

In a notice to stockholders issued by the local board of directors of the company it is stated that the answering of the protests already filed against the increases in several kinds of service "will entail heavy additional charges for inventories, valuation appraisals, employing experts, legal and other expenses, amounting to many thousands of dollars, therefore schedule G, effective May 1, increasing all individual, two-party, four-party and multi-party rates has been filed."

Attention is also called, in the letter to stockholders, to the many protestants against the first increases.

The new schedule of rates will affect all telephone users in the Johnstown service area, which includes:

Johnstown, Conemaugh, Franklin, Echo, Park Hill, Vinco, Mineral Point, Daisytown, Walnut Grove, Geistown, Paint Creek, Krings, Ferndale, Valley Pike, Brownstown, Southmont and rural lines.

Denies Application for Abandonment of Farm Line.

The application of the Farmers Independent Telephone Co. of Red Cloud, Neb., for permission to abandon a farm line 10½ miles long that has become a losing proposition because of drouth conditions affecting the ability of subscribers to pay rentals, has been denied by the state railway commission.

When the competitive struggle was at its height in Red Cloud, the Lincoln company, which two years ago retired from the field and sold out to the Farmers company, built this line out of Inavale, which is seven miles west of Red Cloud, connecting it with a trunk line from Inavale to Red Cloud. Eight farmers took the service.

The company maintained that the line was too long to be economically served and that it extends beyond the Red Cloud zone of service. It gets $72 a year from the four subscribers, but pays pin rental to the Lincoln company, which owns the line from Inavale to Red Cloud, of $56.10. The line is valued at $917, and the loss last year was $151.27.

The Red Cloud company suggested that the four subscribers be served by the Inavale company, a farmers' mutual. The latter vigorously objected because it would impair not only the service for the business subscribers in Inavale, but the use of the line for toll messages, the only one connecting that town with the outside world. The four also objected because of the number of telephones now served by the line and the indifferent service and poor maintenance.

This raised a delicate question, which the commission seeks to solve by ordering that the company continue the line till next January. If by that time there are eight subscribers on it, it will be continued; if not, the company may abandon it.

The commission said that, when the Farmers Independent company of Red Cloud purchased the Lincoln company property, it assumed its obligations. The condition presented is abnormal, and if there had been no competitive fight, the chances are the line would never have been built. It is there, however, and the commission says there is a measure of equity in the claim that the Farmers company is under obligation to continue the line until such time, at least, that it can be demonstrated that it can never be operated without a loss. With eight on the line it will pay but little more than out of pocket cost.

Amery Company (Wis.) Authorized to Increase Rates.

The Amery Electric Co., Amery, was authorized on March 31 by the Wisconsin Railroad Commission to place this schedule of rates into effect April 1.

	Per Month Gross	Net
One-party, business	$3.25	$3.00
Two-party, business	3.00	2.75
Extension, business	1.25	1.00
One-party, residence	2.50	2.25
Two-party, residence	2.25	2.00
Four-party, residence	2.00	1.75
Extension, residence	1.00	.75
Business, rural	2.50	2.25
Residence, rural	2.00	1.75
Extension, rural	1.00	.75
One-party in six-mile zone	3.25	3.00
Four-party in six-mile zone	2.50	2.25
Business switching service	.85	.75
Residence switching service	.60	.50
Line charge		.20
Vacation rates		.75

The Amery Electric Co. operates a telephone exchange at Amery, to which 760 subscribers were connected on December 31, 1926. Switching service is performed for five roadway companies serving approximately 165 subscribers. The annual report of the company showed that its local circuits are partly metallic and partly common return. Of the rural circuits, 31 are metallic and 18 are grounded.

The commission had never made an appraisal of the property. At the time of the hearing, however, the company submitted an appraisal made by the American Appraisal Co. as of October 1, 1926. This indicated a value considerably in excess of the book figures. The company carries its

COLUMBIA
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fixed capital on its books at $81,776.37, as of December 31, 1926. At the book value, this would amount to a cost per station of slightly more than $100.

For the purposes of this case the average book value of $74,105.64 was used for the year 1926 as the rate base without passing upon this figure as representing the fair value of the property.

The commission estimated the annual revenue which might be obtained from the increased rates as proposed by the applicant. Assuming the operating expenses, including taxes, to be approximately the amounts stated for the year 1926, $12,197.24, the proposed increased rates would net the company $9,541.37 for depreciation and return on its investment, which is 12.87 per cent on the average plant value of $74,105.64.

Modifications of the proposed schedule were made by the commission which it was expected will result in a reduction of approximately $150 per annum in the estimated amount available for depreciation and return.

Authorized to Purchase Property and Adjust Rates.

The Wisconsin commission recently rendered its decision in the matter of the application of the Wisconsin Telephone Co., for authority to purchase the property of the Redgranite Telephone Co. and to adjust rates. Objection was made to the jurisdiction of the commission in the matters referred to, but the commission overruled these objections by holding that it has jurisdiction both as to the right of the Wisconsin Telephone Co. to acquire the property and as to the right to increase rates.

Authority was thereupon granted to the Wisconsin Telephone Co. to acquire the property of the Redgranite Telephone Co. for the sum of $3,000 and authorized it to make effective for service rendered on and after May 1, 1927, at its Redgranite exchange a rate of $2 per month net within six miles of the central office and 25 cents per month additional for each mile or fraction thereof beyond the six mile radius.

The Redgranite Telephone Co. was a service station company receiving switching service through the Redgranite exchange of the Wisconsin Telephone Co. It served 87 stations at a rate of $1.66 per month per station.

Summary of Commission Rulings and Schedule of Hearings.

CALIFORNIA.

April 16: Home Telephone & Telegraph Co. of Pasadena, Northern California Telephone Co., Ontario & Upland Telephone Co., Southern California Telephone Co., and the Pacific Telephone & Telegraph Co. applied for a modification of the commission's general orders requiring telephone companies to file their rates for directory advertising with the commission, and also to submit to the commission new telephone directories five days before they are distributed to the public, for the approval of the commission.

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ILLINOIS.

March 24: Order approved suspending until August 4, 1927, proposed rates for service in territory served by the company, stated in rate schedule Ill. C. C. 1, first revised sheet 1, miscellaneous equipment section of the Southwestern Bell Telephone Co.

March 24: Order approved suspending until August 6, 1927, proposed rate for service in Belvidere, stated in rate schedule Ill. C. C. 4, original sheet 6 of the Belvidere Telephone Co.

March 24: Order approved suspending until August 2, 1927, proposed rates for hand set service, stated in rate schedules IPUC 1, sheet 16, for Chicago, Ill. C. C. 1, sheet for sales, IPUC 1, sheet 7, for Delavan, Dwight, Vandalia, Gibson City and Ottawa, et al of the Illinois Bell Telephone Co., as set forth in order.

April 6: Order approved suspending until July 13, 1927, proposed rates for service in Waltonville, Bonnie, Woodlawn, Hailsworth, Opdyke, Ina and Belle River, as stated in state schedule Ill. C. C. 2, of the Tri-County Telephone Co., Mt. Vernon.

April 6: Order approving suspending until August 16, 1927, proposed rates for service in Plainville, Adams county, stated in rate schedule Ill. C. C. 3, of the Plainville telephone exchange.

April 7: Order approving supplemental agreement, dated March 4, 1927, between the Illinois Bell Telephone Co. and the American Telephone & Telegraph Co., it being a modification of an intercorporate agreement, dated March 1, 1925.

April 7: Order approving intercorporate agreement, dated March 8, 1927, between the Illinois Bell Telephone Co. and the Illinois Southern Telephone Co., Murphysboro, it being a modification of an intercorporate agreement dated March 27, 1926.

April 7: Order approving lease by the Chicago, Burlington & Quincy Railroad Co. to the Camp Point Telephone Co., Camp Point, of certain land in Camp Point, described in order, for five years at $5 per year.

April 7: Order approving lease by the Chicago, Burlington & Quincy Railroad Co. to the Illinois Bell Telephone Co. of certain premises in Chicago, described in order, for five years at $9 per year.

April 7: Order approving so much of agreement, dated December 22, 1926, between the Alton & Southern Railroad and the Southwestern Bell Telephone Co. as provides for the construction and operation of a telephone line on the poles of the Alton & Southern Railroad at Mitchell, Madison county.

April 7: No action taken on schedules of rates of the Automatic Home Telephone Co., Pontiac, for toll service in Pontiac, Livingston county; schedule of rates of the Streator Telephone Co., Streator, for toll service in Grand Ridge, La Salle county; on Southwestern Bell Telephone Co.'s original sheets 1 and 2, of new "Order Turrets" section of Ill. C. C. 1, effective April 1, 1927.

April 19: Hearing at Springfield before Commissioner Johnson in the matter of applications for orders consenting to and authorizing the discontinuance of exchanges owned and operated in the villages of New Burnside, Belknap and Grand Chain, Johnson county.

April 19: Hearing at Springfield before Commissioner Smith of the Illinois Southern Telephone Co., Murphysboro, against the Goreville Telephone Co., Goreville, in the matter of petition for an order requiring the respondent to enter into an intercorporate contract with petitioner cov-

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ering connections between the lines from Goreville to Marion and Vienna, Williamson county; amended complaint filed by Illinois Southern Telephone Co.

April 19: Hearing at Springfield before Commissioner Trovillion of the Illinois Southern Telephone Co., Murphysboro, in the matter of proposed advance in rates for service covering toll service in Belknap, Cypress, Grand Chain, New Burnside and Vienna, in Johnson and Pulaski counties, respectively, stated in sup. No. 1 to Ill. C. C. No. 1 filed by this company; protest filed by the Vienna Commercial Club and other subscribers by Geo. B. Gillespie, attorney; supplemental complaint filed by W. A. Williams relative to toll charge between New Burnside, Creal Springs and Stonefort, charged by the Illinois Southern Telephone Co.

Hearing of the residents of Vienna and Johnson County against the Illinois Southern Telephone Co. in the matter of complaint relative to service by defendant company in Vienna, and in Johnson county, in vicinity of Vienna.

April 21: Hearing at Springfield before Commissioner Wright of the Eureka Telephone Co., Eureka, in the matter of proposed advance in rates for service in Eureka, Woodford county, stated in rate schedule Ill. C. C. No. 2 of the company.

INDIANA.

April 2: Hearing before Commissioner Clyde H. Jones on application of the Rochester Telephone Co., Rochester, to purchase the Whipporwill Telephone Co.

April 19: Hearing at Rushville of the petition of the Rushville Co-operative Telephone Co., Rushville, for authority to increase its rates.

KANSAS.

April 4: Application filed of the Haddam Telephone Exchange, Haddam, for increased rates at Haddam and vicinity.

MINNESOTA.

April 12: Northwestern Bell Telephone Co. authorized to place in effect, as of May 1, an increased schedule of rates at Hibbing.

MISSOURI.

April 6: Southwestern Bell Telephone Co. authorized to sell two St. Louis structures, the Kinloch buildings, for $1,050,000 and the Swope building for $385,000.

April 6: Cape Girardeau Bell Telephone Co., Cape Girardeau, authorized to purchase the properties of the Lead Belt Telephone Co. and exchanges at Flat River, Farmington and Bonne Terre and toll lines connecting them.

NEBRASKA.

April 11: Complaint filed by the Diller Telephone Co., Diller, against the Odell Telephone Co., Odell, alleging that the latter is encroaching on its territory.

April 12: Complaint filed by L. C. Peters, of Verdel, against the Ponca Valley Telephone Co., Verdel, alleging unsatisfactory service.

April 12: In the matter of application of the Citizens Telephone Co., of Paxton, for validation of rates of $1 a month for business extensions and 50 cents for residence extensions; it appearing to the commission that the rates are reasonable and standard, ordered that the company be authorized to continue the collection of the same as a part of its schedule of rates.

April 14: Application filed by G. A. Salisbury, owner of Belden Telephone Co., Belden, asking for authority to increase switching rates to 50 cents a month and submitting consent of switched subscribers to the increased charge.

NEW YORK.

April 15: Petition granted of the Seneca Gorham Telephone Corp., Canadaigua, to construct lines in the territory now served by the Ontario County Mutual Telephone Co. in the town of East Bloomfield, West Bloomfield, Richmond, Bristol, South Bristol and Canadice, Ontario county.

PENNSYLVANIA.

April 1: New schedule of rates of the Johnstown Telephone Co., Johnstown, filed, to be effective May 1. Several protests filed.

April 20: Hearing at Harrisburg on original rate increases of the Johnstown Telephone Co.

WISCONSIN.

April: Authority granted the Wisconsin Telephone Co. to acquire the property of the Redgranite Telephone Co. for the sum of $3,000, and authorizing it to make effective for service rendered on and after May 1, 1927, at its Redgranite exchange a rate of $2 per month net within six miles of the central office and 25 cents per month additional for each mile or fraction thereof beyond the six-mile radius.

April 21: Hearing at Madison on the application of the Westby Telephone Co., Westby for authority to increase rates.

April 22: Hearing at Madison on the joint application of the Boscobel Telephone Co., Boscobel, and the Muscoda Telephone Co., Muscoda, to increase toll rates.

April 26: Hearing at Wisconsin Rapids on the complaint of the Babcock Telephone Co., Babcock, against the Pittsville Telephone Co., Pittsville, regarding charges for interexchange service.

April 29: Hearing at Madison on the application of the State Telephone Co., Madison, for authority to increase rates.

May 3: Hearing at Madison on the application of the Pacific-Wyocena Co-operative Telephone Co., Wyocena, for authority to increase its rates.

May 6: Hearing at Madison on the application of the Allenton-Kholsville Telephone Co., Allenton, for authority to increase rates.

May 6: Hearing at Madison on the application of the Thorp Telephone Co., Thorp, for authority to increase its rates.

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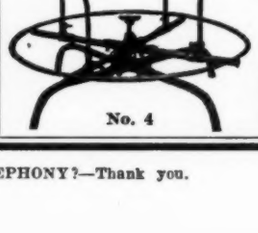

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Construction.

NOKOMIS, ILL.—A franchise has been granted to the Illinois Consolidated Bell Telephone Co. for installation of a new telephone system in this town, and to erect a $40,000 new central office.

ODON, MD.—The exchange building of the Odon and Madison Township Telephone Co. is to be remodeled. Bids for the work were opened Saturday, March 12.

ALGER, MICH.—Moffat Telephone Co. will improve and extend its line here.

ST. LOUIS, MO.—The Southwestern Bell Telephone Co. will expend approximately $100,000 on aerial and underground cables in a new district west of the city limits, supplementing main cables from Cabana-Parkview exchange.

DELAWARE, OHIO—The Citizens Telephone Co. will install 10,000 feet of wire this spring. Most of it will be in underground cables.

PLAIN CITY, OHIO—The Plain City Telephone Co. has recently installed considerable new equipment which will improve the service of the exchange to a marked degree. One of the features of the equipment is adequate lightning protection for all lines, which will protect the equipment during the heaviest storms. Jerry Carroll is manager of the company.

FOREST GROVE, ORE.—George A. Bauman, local manager of the Oregon Telephone Co. here, has announced preliminary plans for the construction of a new building to house the exchange and probably one or two other enterprises.

Mr. Bauman recently returned from Marshfield where he conferred with other officials of the company on the proposed work.

MARTIN, TENN.—The Weakley County Telephone Co. will probably extend its lines to Mt. Pelia and New Home communities.

CLIFTON FORGE, VA.—The new two-story brick building being erected by the Clifton Forge Mutual Telephone Co. is nearing completion, as the exterior is about finished. When ready for occupancy, the company will make use of this structure for the exchange, offices and general purposes.

Elections.

GRAND MOUND, IOWA—The Farmers' Mutual Telephone Co. held its annual meeting this month. There was a good attendance and an interesting business meeting. Election of officers resulted as follows: President, A. A. Barber; vice-president, W. O. Langbehn; treasurer, J. W. Kelly; secretary, Harry Meints. Directors—Henry Geffers, Leonard Hahn, Henry Peters, Joe Kallenback and Anton Green.

LITCHFIELD, ILL.—The annual meeting of the stockholders of the Peoples Mutual Telephone Co. was held at Hillsboro, and these three directors were re-elected: V. A. Bost, Fillmore; Charles Schwab, Litchfield, and Malcolm Pence, Sorento.

ALLENDALE, MICH.—Officers re-elected by the Allendale Telephone Co. are: President and general manager, T. E. Hubbel; vice-president, J. J. Walbrink; secretary, Albert Hinken, and treasurer, R. Dragt.

At a luncheon meeting, attended by about 250 patrons of the company, illustrated talks on telephone operation were given by Grand Rapids representatives of the Michigan Bell Telephone Co.

OGDEN, MICH.—At the recent annual meeting of the Ogden Mutual Telephone Co. these officers were elected: President, A. B. Youngs; vice-president, C. B. Cheney; secretary and treasurer, J. W. Pence; director, J. N. Robertson.

SLEEPY EYE, MINN.—At the annual meeting of the Sleepy Eye Telephone the year's business was gone over and showed a very prosperous year for 1926, a 10 per cent dividend being declared. The election of officers resulted in re-electing all the old officers: C. P. Cutting, president; F. Romberg, vice-president; Wm. Brust, secretary; F. J. Riedl, treasurer; Mike Fohl, manager; directors, C. C. Hansen, Henry Dohrman, John Ebenhoh, Dr. Kiefer, W. W. Smith.

ASHLAND, OHIO—E. E. Brown was elected director of the Star Telephone Co. at the annual meeting of stockholders held recently. Mr. Brown will fill the vacancy

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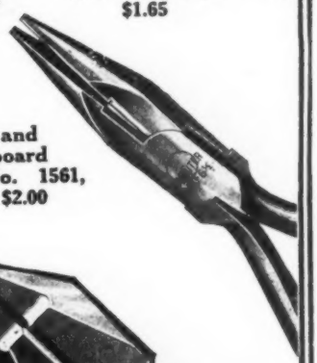

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left by the death of Judge F. N. Patterson.

The officers were re-elected: S. H. Grabill, president; J. R. Swartz, vice-president; Charles W. Good, secretary and general manager; George R. Freer, treasurer; J. H. George, superintendent of construction; and Miss Grace I. Ryland, traffic chief.

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WANTED POSITION—As plant manager or troubleman with independent company; 200 to 400 stations, Missouri preferred. 14 years' experience, local and common batteries. Employed at present. Address 6875, care of TELEPHONY.

POSITION WANTED—By man who has had several years' experience in Switch-board installation and maintenance, also as Wire Chief and Superintendent of large plant, was Manager here until Bell merger, can furnish best of references. Address A. M. Crichton, Uniontown, Penna.

POSITION WANTED—Can furnish tools, test instruments; twenty years' experience; car, and best references. Prefer Arkansas, Missouri, Oklahoma, Texas or South. Address 6877, care of TELEPHONY.

POSITION WANTED—With telephone company, 9 years' experience in circuit work and central office equipment. Can furnish references. Address 6863, care of TELEPHONY.

POSITION WANTED—By competent, experienced man to manage and maintain telephone exchange or rebuilt switchboard equipment. Address 6879, care of TELEPHONY.

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